NUCLEONICS

INDEX to VOLUME 16, January–December, 1958

How to Use the Index

Following tradition, this year's index headings have been modified.

Again, cross-referencing is more elaborate, particularly in the areas of radiation applications and nuclear reactors. "Nuclear Reactors, Concepts," has been added as a category; "Nuclear Reactors, Power" has been subdivided into "Experimental" and "Full-Scale;" "Nuclear Reactors, Propulsion" is divided into "Aircraft," "Land" and "Marine."

Many countries are indexed individually, as are various organizations, e.g., the Atomic Energy Commission. However, company names can be found under the heading "Companies."

Significant elements can be found under their names, e.g., "Thorium," "Uranium" and "Zirconium."

Abbreviations used in the index refer to NUCLEONICS editorial departments, as follows: **AR**, Applied Radiation; **Edit**, editorials; **LE**, Letters; **NE**, Nuclear Engineering; **NEN**, Nuclear Engineering Notes; **PM**, Products and Materials; **R**, Roundup; **RR**, Reactor Roundtable; **TA**, Technical Advances; and **TH**, Thermonucleonics. Cross Sections, **CS**, was changed to Instrumentation and Measurements, **IM**, in the August issue; "**corr.**" refers to article corrections published in subsequent issues.

Because of publication deadlines, the December "Roundup" has not been indexed.

SUBJECT INDEX

A

Accelerators
Argonne 12.5-Bev unit authorized; MURA rivalry (*R*)....Jan. 27
AEC donates 32-Mev accelerator to USC (*R*). May 27
Cockcroft-Waltons—good neutron producers (*AR*)....Jan. 106
Michigan State plans cyclotron (*R*)....Mar. 25
NSF asks more spending for accelerators (*R*). Feb. 23

Accidents (See *Safety*)
Activation Analysis
Neutron gaging for waveguide plating (*AR*).. Aug. 134
Using nuclear methods in oil-well logging. R. Caldwell....Dec. 62
What's new in electronics?....June 56
Aircraft, Nuclear-powered (See *Nuclear reactors, propulsion, aircraft*)
Analysers, Pulse Height (See *Instruments, electronic*)
Applied Radiation (See *Radiation applications*)
Argonne National Laboratory
Building Fuels Fabrication Facility, Fuels Technology Center (*R*)....June 21
Atomic Energy Commission (See also *Classification policies*)
Agrees with JCAE on new Pu buyback price from 1963 (*R*)....Sept. 152
Agrees with JCAE to speed up reactor program (*R*)....July 17
Asks $250-million spending increase for '59; details (*R*)....Feb. 22
AEC off on big program to speed radiation use (*R*)....Oct. 21
AEC permits Vallecitos to go to higher power (*R*)....Feb. 26
AEC's fuel program. R. Dalzell, *et al.*..Aug. 78
AEC's industrial-heat program. J. Kaufmann, D. Stewart, Jr....Feb. 65
Authorization requests pruned by budget; JCAE may impose 2 reactors (*R*)....June 18
Boosts U-buying, may authorize export (*R*).. May 24
Budget Bureau funds-holdback hurt atomic program (*R*)....Jan. 17
Congress passes $400-million atom bill despite President (*R*)....Aug. 17
Democrats seek space policy control for AEC (*R*)....Mar. 20
Doubling of '59 program voted by JCAE (*R*). July 22
Entire reactor command changing hands; Luedecke new GM (*R*)....July 21
Extends indemnity to contractors (*R*)....Feb. 27
Field offices to issue access permits (*R*)...July 27
Fields resigns, others may (*R*)....June 28
Good luck, Mr. McCone! (*Edit.*)....July 61
GETR gets construction permit (*R*)....May 26
Harmony talks start with JCAE (*R*)....Jan. 20
Increase in AEC basic research spending sought (*R*)....Mar. 22
Informal accord reached on program with JCAE (*R*)....Aug. 18
IRL gets operating license (*R*)....Oct. 29
Launches broad 1st-phase isotope development plan (*R*)....Sept. 154
Launches fuel, test-reactor programs (*R*). Nov. 23
Liberalizes nonreactor use of U (*R*)....July 22
Lifts 20% enrichment export ceiling for research reactors (*R*)....May 26
McCone names reactor advisory group (*R*).... Nov. 25
McCone to be AEC's fourth head; profile (*R*). July 20
NACA gets research reactor construction permit (*R*)....Aug. 27
Nuclear-rocket timetable....July 69
Office of Hearing Examiner set up, Jensch named (*R*)....Sept. 157
Pittman new reactor chief; task force system introduced; table of new reactor high command (*R*)....Nov. 22
Plans accelerated industrial radiation program (*R*)....Apr. 24
Power shifting away to JCAE on reactor plans (*R*)....Aug. 22
Pricing enriched uranium. H. Hollister, A. Burington....Jan. 54
Reduced secrecy for fusion work? (*TH*)...Jan. 84
Sets 1-year plan, still silent on JCAE talks (*R*). Apr. 17
Shucks off foreign liability issue (*R*)....June 24
Slashes isotope prices 90–99% (*R*)....May 27
Splits off regulatory functions: Division of Civilian Applications split (*R*)....Jan. 19
Strauss named Secretary of Commerce, out of atoms; McCone won't wear "second hat" (*R*)....Nov. 24
The economic situation as viewed by the AEC Jan. 48
United States and Britain reveal fusion advances....Feb. 90
U. S. export policies. M. Kratzer....Aug. 82
Atomic Industrial Forum
Forum meeting seeks uniformity in state regulations (*R*)....Feb. 24
Nuclearama, equipment exhibit, sponsored (*R*) Jan. 27
Publishes survey of state activities (*R*)...Aug. 27
Australia
First figures on Rum Jungle production show increase (*R*)....Jan. 25
HIFAR started up (*R*)....May 20
Austria
Austria buys first reactor from AMF (*R*). June 26
Austria buys second reactor, Triga (*R*)...Aug. 25
Austria finishes heavy water plant (*R*)...Aug. 26

B

Belgium
New nuclear fuel firm (*R*)....Nov. 26
Beryllium
Biggest single order, for Belgian BR-2, to Brush (*R*)....July 27
GEC of UK opens new Be research lab (*R*)... Apr. 26
UK building Europe's first production plant (by ICI) (*R*)....Oct. 30
Beta Counters (See *Instruments, detection*)
Beta Rays
Pinhole camera maps beta-active deposits. L. Preuss, G. Jenkins (*IM*)....Oct. 98
New proportional counters for gases and vapors. R. Wolfgang, C. Mackay....Oct. 69
Biology (See *Medical physics and research*)
Book Reviews
"Advances in Radiobiology," edited by G. C. de Hevesy, A. G. Forssberg, J. D. Abbatt... July 112
"An Introduction to Fluid Mechanics and Heat Transfer," by J. M. Kay....May 124
"An Introduction to Reactor Physics," by D. J. Littler, J. F. Raffle....May 124
"Atomic Energy in Agriculture," by William E. Dick....May 127
"Corrosion and Wear Handbook for Water Cooled Reactors," edited by D. J. De Paul. Mar. 124
"Effects of Radiation on Materials," edited by J. Harwood, H. Hausner, J. Morse, W. Rauch....Nov. 204
"Encyclopedia of Physics, Vol. 42, Nuclear Reactions III," edited by S. Flugge....May 124
"Fundamental Constants of Physics," by E. R. Cohen, K. M. Crows, J. W. M. Dumond... Oct. 118
"Ideas, Inventions, and Patents," by Robert A. Buckles....Aug. 142
"Isotopic Tracers in Biology, 3rd ed.," by Martin D. Kamen....Mar. 124
"Les Centrales Nucléaires," by P. Chambadal Nov. 204
"Mésure et Detection des Rayonnements Nucléaires," by J. Sharpe, D. Taylor...Oct. 118
"Nuclear Chemical Engineering," by Manson Benedict, Thomas H. Pigford....Aug. 142
"Nuclear Stripping Reactions," by S. T. Butler and O. H. Hittmair....June 107
"Physik und Technik der Atomreaktoren," by Ferdinand Cap....Apr. 117
"Précis d'Energie Nucléaire, 2nd ed." by G. Cahen, P. Treille....Aug. 145
"Progress in Nuclear Energy, Series 8, Vol. 1—The Economics of Nuclear Power," edited by J. Gueron, *et al.*....Mar. 125
"Radiation Effects in Solids," by G. J. Dienes, G. H. Vineyard....May 126
"Radiation Effects on Materials, Vol. 1," July 112
"Radiation Shileding," by B. T. Price, C. C. Horton, K. T. Spinney....Jan. 111
"Radiography in Modern Industry, 2nd ed.," July 112
"Soviet Education for Science and Technology," by Alexander G. Korol....May 126
"The Chemistry of the Actinide Elements," by Joseph J. Kats, Glenn T. Seaborg....Oct. 118
Breeders (See *Breeding* and *Nuclear Reactors*)
Breeding (See also *Fuel cycles, Fuels* and *Nuclear reactors*)
Power breeding as a national objective. A. Weinberg (*Edit.*)...Aug. 75; (*also*) Fast breeders for power. R. Stanford (*LE*)..... Nov. 210
Britain
Besides AGR and HTGC, AEA developing D_2O type (*R*)....Sept. 28
Britain drops plans to borrow abroad (*R*).... June 19
British comments on GE's SENN victory, its economies (*R*)....Nov. 20
Dounreay Materials Testing Reactor goes critical (*R*)....June 26
Dreadnought to get Westinghouse reactor (*R*). Aug. 19
Dungeness site chosen, may connect with French grid (*R*)....July 26
Gas-cooled reactor for the South of Scotland Electricity Board. P. Grant (*NE*)....May 108
Gas-cooled reactors still U.K. favorite (*NEN*). May 102
GEC reports many inquiries on Calder-type; labs expanded (*R*)....May 25
Harwell starts up Hazel; ZETR dismantled (*R*) May 25
Heat reactor prospects abroad....Feb. 70
Horace goes critical at Aldermaston (*R*)..July 28
New reactor concepts....Sept. 78
NPPC in broad collaboration pact with AGIP; Euratom questions validity of Latina contract (*R*)....June 17
Owen says no firm decision for making Pu in civil stations (*R*)....Sept. 28
Owen urges gaseous-diffusion information exchange (*R*)....Nov. 26
Sizewell tract chosen as site (*R*)....Apr. 26
Spectacular progress reported on all four plants (*R*)....June 23
Spokesmen differ on exports' importance (Plowden, Horobin) (*R*)....Nov.
Steam cycles for advanced gas-cooled reactors Sept. 81
Two new industry teams formed on ship propulsion and instrumentation (*R*)....June 26
U. K. expect big advances in AGR (*R*)..Nov. 26
United Kingdom gives fuel experience...Sept. 102
U. K. in 5-year breeder information exchange pact with PRDC (*R*)....Sept. 154
U. K. program future pegged to gas-cooled (*R*) Aug. 17
U. K. reported asking U. S. enriched U (*R*).... Feb. 24
U. K. steadfastly pursues the pinch....Sept. 70
U. K. to speed fuel element production; Calder experiments (*R*)....July 26
United States and Britain reveal fusion advances....Feb. 90
Wigner energy release for BEPO (*NEN*)..July 99
World nuclear programs....Sept. 62
Burnable Poisons (See *Fuel cycles;* and *Reactor physics*)

C

Canada
Canada starting first thorium plant (*R*)..Aug. 26
Natural U, D_2O reactor offered (*R*)....Feb. 26
NPD construction resumed (*R*)....July 25
NPD design changes completed; larger units studied (*R*)....Feb. 25
NRU knocked out by freak accident (*R*) June 26
NRU refueled while in operation; charge machine (*R*)....Apr. 26
Nuclear Insurance Association of Canada founded (*R*)....July 26
Nuclear Power Plant division set up in Toronto; tasks (*R*)....Mar. 27
Organic-cooled D_2O reactor....Sept. 80
World nuclear programs....Sept. 62
Carbon (See *Fuels; Moderators;* and *Nuclear reactors, materials*)
Ceramics (See *Fuels;* and *Nuclear reactors, materials*)
Chemical Reprocessing of Fuels (See *Fuel reprocessing*)
China, Nationalist
Taiwan buys GE research reactor (*R*)....May 26
China, Peiping
China completes first cyclotron (*R*)....Apr. 26
First reactor goes critical (*R*)....July 28

NUCLEONICS

INDEX to VOLUME 16, January–December, 1958

How to Use the Index

Following tradition, this year's index headings have been modified.

Again, cross-referencing is more elaborate, particularly in the areas of radiation applications and nuclear reactors. "Nuclear Reactors, Concepts," has been added as a category; "Nuclear Reactors, Power" has been subdivided into "Experimental" and "Full-Scale;" "Nuclear Reactors, Propulsion" is divided into "Aircraft," "Land" and "Marine."

Many countries are indexed individually, as are various organizations, e.g., the Atomic Energy Commission. However, company names can be found under the heading "Companies."

Significant elements can be found under their names, e.g., "Thorium," "Uranium" and "Zirconium."

Abbreviations used in the index refer to NUCLEONICS editorial departments, as follows: **AR**, Applied Radiation; **Edit**, editorials; **LE**, Letters; **NE**, Nuclear Engineering; **NEN**, Nuclear Engineering Notes; **PM**, Products and Materials; **R**, Roundup; **RR**, Reactor Roundtable; **TA**, Technical Advances; and **TH**, Thermonucleonics. Cross Sections, **CS**, was changed to Instrumentation and Measurements, **IM**, in the August issue; "**corr.**" refers to article corrections published in subsequent issues.

Because of publication deadlines, the December "Roundup" has not been indexed.

SUBJECT INDEX

A

Accelerators
Argonne 12.5-Bev unit authorized; MURA rivalry (*R*)....Jan. 27
AEC donates 32-Mev accelerator to USC (*R*). May 27
Cockcroft-Waltons—good neutron producers (*AR*)....Jan. 106
Michigan State plans cyclotron (*R*)....Mar. 25
NSF asks more spending for accelerators (*R*). Feb. 23

Accidents (See *Safety*)
Activation Analysis
Neutron gaging for waveguide plating (*AR*).. Aug. 134
Using nuclear methods in oil-well logging. R. Caldwell....Dec. 62
What's new in electronics?....June 56
Aircraft, Nuclear-powered (See *Nuclear reactors, propulsion, aircraft*)
Analysers, Pulse Height (See *Instruments, electronic*)
Applied Radiation (See *Radiation applications*)
Argonne National Laboratory
Building Fuels Fabrication Facility, Fuels Technology Center (*R*)....June 21
Atomic Energy Commission (See also *Classification policies*)
Agrees with JCAE on new Pu buyback price from 1963 (*R*)....Sept. 152
Agrees with JCAE to speed up reactor program (*R*)....July 17
Asks $250-million spending increase for '59; details (*R*)....Feb. 22
AEC off on big program to speed radiation use (*R*)....Oct. 21
AEC permits Vallecitos to go to higher power (*R*)....Feb. 26
AEC's fuel program. R. Dalzell, *et al.*..Aug. 78
AEC's industrial-heat program. J. Kaufmann, D. Stewart, Jr....Feb. 65
Authorization requests pruned by budget; JCAE may impose 2 reactors (*R*)....June 18
Boosts U-buying, may authorize export (*R*).. May 24
Budget Bureau funds-holdback hurt atomic program (*R*)....Jan. 17
Congress passes $400-million atom bill despite President (*R*)....Aug. 17
Democrats seek space policy control for AEC (*R*)....Mar. 20
Doubling of '59 program voted by JCAE (*R*). July 22
Entire reactor command changing hands; Luedecke new GM (*R*)....July 21
Extends indemnity to contractors (*R*)....Feb. 27
Field offices to issue access permits (*R*)...July 27
Fields resigns, others may (*R*)....June 28
Good luck, Mr. McCone! (*Edit.*)....July 61
GETR gets construction permit (*R*)....May 26
Harmony talks start with JCAE (*R*)....Jan. 20
Increase in AEC basic research spending sought (*R*)....Mar. 22
Informal accord reached on program with JCAE (*R*)....Aug. 18
IRL gets operating license (*R*)....Oct. 29
Launches broad 1st-phase isotope development plan (*R*)....Sept. 154
Launches fuel, test-reactor programs (*R*). Nov. 23
Liberalizes nonreactor use of U (*R*)....July 22
Lifts 20% enrichment export ceiling for research reactors (*R*)....May 26
McCone names reactor advisory group (*R*).... Nov. 25
McCone to be AEC's fourth head; profile (*R*). July 20
NACA gets research reactor construction permit (*R*)....Aug. 27
Nuclear-rocket timetable....July 69
Office of Hearing Examiner set up, Jensch named (*R*)....Sept. 157
Pittman new reactor chief; task force system introduced; table of new reactor high command (*R*)....Nov. 22
Plans accelerated industrial radiation program (*R*)....Apr. 24
Power shifting away to JCAE on reactor plans (*R*)....Aug. 22
Pricing enriched uranium. H. Hollister, A. Burington....Jan. 54
Reduced secrecy for fusion work? (*TH*)...Jan. 84
Sets 1-year plan, still silent on JCAE talks (*R*). Apr. 17
Shucks off foreign liability issue (*R*)....June 24
Slashes isotope prices 90–99% (*R*)....May 27
Splits off regulatory functions: Division of Civilian Applications split (*R*)....Jan. 19
Strauss named Secretary of Commerce, out of atoms; McCone won't wear "second hat" (*R*)....Nov. 24
The economic situation as viewed by the AEC Jan. 48
United States and Britain reveal fusion advances....Feb. 90
U. S. export policies. M. Kratzer....Aug. 82
Atomic Industrial Forum
Forum meeting seeks uniformity in state regulations (*R*)....Feb. 24
Nuclearama, equipment exhibit, sponsored (*R*) Jan. 27
Publishes survey of state activities (*R*)...Aug. 27
Australia
First figures on Rum Jungle production show increase (*R*)....Jan. 25
HIFAR started up (*R*)....May 20
Austria
Austria buys first reactor from AMF (*R*). June 26
Austria buys second reactor, Triga (*R*)...Aug. 25
Austria finishes heavy water plant (*R*)...Aug. 26

B

Belgium
New nuclear fuel firm (*R*)....Nov. 26
Beryllium
Biggest single order, for Belgian BR-2, to Brush (*R*)....July 27
GEC of UK opens new Be research lab (*R*)... Apr. 26
UK building Europe's first production plant (by ICI) (*R*)....Oct. 30
Beta Counters (See *Instruments, detection*)
Beta Rays
Pinhole camera maps beta-active deposits. L. Preuss, G. Jenkins (*IM*)....Oct. 98
New proportional counters for gases and vapors. R. Wolfgang, C. Mackay....Oct. 69
Biology (See *Medical physics and research*)
Book Reviews
"Advances in Radiobiology," edited by G. C. de Hevesy, A. G. Forssberg, J. D. Abbatt... July 112
"An Introduction to Fluid Mechanics and Heat Transfer," by J. M. Kay....May 124
"An Introduction to Reactor Physics," by D. J. Littler, J. F. Raffle....May 124
"Atomic Energy in Agriculture," by William E. Dick....May 127
"Corrosion and Wear Handbook for Water Cooled Reactors," edited by D. J. De Paul. Mar. 124
"Effects of Radiation on Materials," edited by J. Harwood, H. Hausner, J. Morse, W. Rauch....Nov. 204
"Encyclopedia of Physics, Vol. 42, Nuclear Reactions III," edited by S. Flugge....May 124
"Fundamental Constants of Physics," by E. R. Cohen, K. M. Crows, J. W. M. Dumond... Oct. 118
"Ideas, Inventions, and Patents," by Robert A. Buckles....Aug. 142
"Isotopic Tracers in Biology, 3rd ed.," by Martin D. Kamen....Mar. 124
"Les Centrales Nucléaires," by P. Chambadal Nov. 204
"Mésure et Detection des Rayonnements Nucléaires," by J. Sharpe, D. Taylor...Oct. 118
"Nuclear Chemical Engineering," by Manson Benedict, Thomas H. Pigford....Aug. 142
"Nuclear Stripping Reactions," by S. T. Butler and O. H. Hittmair....June 107
"Physik und Technik der Atomreaktoren," by Ferdinand Cap....Apr. 117
"Précis d'Energie Nucléaire, 2nd ed." by G. Cahen, P. Treille....Aug. 145
"Progress in Nuclear Energy, Series 8, Vol. 1—The Economics of Nuclear Power," edited by J. Gueron, *et al.*....Mar. 125
"Radiation Effects in Solids," by G. J. Dienes, G. H. Vineyard....May 126
"Radiation Effects on Materials, Vol. 1," July 112
"Radiation Shileding," by B. T. Price, C. C. Horton, K. T. Spinney....Jan. 111
"Radiography in Modern Industry, 2nd ed.," July 112
"Soviet Education for Science and Technology," by Alexander G. Korol....May 126
"The Chemistry of the Actinide Elements," by Joseph J. Kats, Glenn T. Seaborg....Oct. 118
Breeders (See *Breeding* and *Nuclear Reactors*)
Breeding (See also *Fuel cycles, Fuels* and *Nuclear reactors*)
Power breeding as a national objective. A. Weinberg (*Edit.*)...Aug. 75; (*also*) Fast breeders for power. R. Stanford (*LE*)..... Nov. 210
Britain
Besides AGR and HTGC, AEA developing D_2O type (*R*)....Sept. 28
Britain drops plans to borrow abroad (*R*).... June 19
British comments on GE's SENN victory, its economies (*R*)....Nov. 20
Dounreay Materials Testing Reactor goes critical (*R*)....June 26
Dreadnought to get Westinghouse reactor (*R*). Aug. 19
Dungeness site chosen, may connect with French grid (*R*)....July 26
Gas-cooled reactor for the South of Scotland Electricity Board. P. Grant (*NE*)....May 108
Gas-cooled reactors still U.K. favorite (*NEN*). May 102
GEC reports many inquiries on Calder-type; labs expanded (*R*)....May 25
Harwell starts up Hazel; ZETR dismantled (*R*) May 25
Heat reactor prospects abroad....Feb. 70
Horace goes critical at Aldermaston (*R*)..July 28
New reactor concepts....Sept. 78
NPPC in broad collaboration pact with AGIP; Euratom questions validity of Latina contract (*R*)....June 17
Owen says no firm decision for making Pu in civil stations (*R*)....Sept. 28
Owen urges gaseous-diffusion information exchange (*R*)....Nov. 26
Sizewell tract chosen as site (*R*)....Apr. 26
Spectacular progress reported on all four plants (*R*)....June 23
Spokesmen differ on exports' importance (Plowden, Horobin) (*R*)....Nov.
Steam cycles for advanced gas-cooled reactors Sept. 81
Two new industry teams formed on ship propulsion and instrumentation (*R*)....June 26
U. K. expect big advances in AGR (*R*)..Nov. 26
United Kingdom gives fuel experience...Sept. 102
U. K. in 5-year breeder information exchange pact with PRDC (*R*)....Sept. 154
U. K. program future pegged to gas-cooled (*R*) Aug. 17
U. K. reported asking U. S. enriched U (*R*).... Feb. 24
U. K. steadfastly pursues the pinch....Sept. 70
U. K. to speed fuel element production; Calder experiments (*R*)....July 26
United States and Britain reveal fusion advances....Feb. 90
Wigner energy release for BEPO (*NEN*)..July 99
World nuclear programs....Sept. 62
Burnable Poisons (See *Fuel cycles;* and *Reactor physics*)

C

Canada
Canada starting first thorium plant (*R*)..Aug. 26
Natural U, D_2O reactor offered (*R*)....Feb. 26
NPD construction resumed (*R*)....July 25
NPD design changes completed; larger units studied (*R*)....Feb. 25
NRU knocked out by freak accident (*R*) June 26
NRU refueled while in operation; charge machine (*R*)....Apr. 26
Nuclear Insurance Association of Canada founded (*R*)....July 26
Nuclear Power Plant division set up in Toronto; tasks (*R*)....Mar. 27
Organic-cooled D_2O reactor....Sept. 80
World nuclear programs....Sept. 62
Carbon (See *Fuels; Moderators;* and *Nuclear reactors, materials*)
Ceramics (See *Fuels;* and *Nuclear reactors, materials*)
Chemical Reprocessing of Fuels (See *Fuel reprocessing*)
China, Nationalist
Taiwan buys GE research reactor (*R*)....May 26
China, Peiping
China completes first cyclotron (*R*)....Apr. 26
First reactor goes critical (*R*)....July 28

Classification policies
Fusion declassification to be implemented by Oct. 31 (*R*) ..... Oct. 29
Fusion declassified at Geneva (*R*) ..... Sept. 18
Colombia
Colombia seeks U. S. research reactor (*R*) ..... July 27
Companies
ACF Industries unveils Model 605 training reactor, 2nd low power (*R*) ..... May 26
American & Foreign Power Co. indefinitely postpones three Latin reactors (*R*) ..... May 26
AMF Atomics gets Puerto Rico swimming-pool job (*R*) ..... July 28
AMF Atomics has power project again: Cuba (*R*) ..... Sept. 28
AMF Atomics sells reactor to Iran (*R*) ..... Aug. 25
Associated Nucleonics new name of Walter Kidde Nuclear, bought by Stone & Webster (*R*) ..... Mar. 19
Atomfair and three meetings mark 1958 nuclear congress ..... Feb. 77
Atomics International begins $1.25-million expansion program (*R*) ..... June 27
Atomics International in trade pact with Demag (*R*) ..... Jan. 19
Atomics International signs contract on epithermal reactor research (*R*) ..... Feb. 26
Austria buys its first reactor from AMF (*R*) ..... June 25
Babcock & Wilcox analysis of enrichment cost effects abroad (*R*) ..... Apr. 23
Babcock & Wilcox building critical facility for LMFBR (*R*) ..... Oct. 29
Babcock & Wilcox shows new research reactor, hot exponential facility (*R*) ..... Nov. 25
C-Stellarator Associates formed by Allis-Chalmers, RCA (*R*) ..... Feb. 27
Davison Chemical Co. begins production at Erwin plant (*R*) ..... Apr. 27
General Dynamics moves into new Hopkins Lab at Torrey Pines (*R*) ..... Aug. 27
General Dynamics sells Triga to Austria (*R*) ..... Aug. 25
General Dynamics sells Triga to Belgian Congo (*R*) ..... Nov. 26
General Dynamics sells Triga to CNRN, Rome (*R*) ..... Oct. 29
General Electric gets contract to develop improved *Savannah* core (*R*) ..... May 27
General Electric gets Humboldt Bay job (*R*) ..... Mar. 17
General Electric proposes Knowhow, Sunrise acceleration plans to industry (*R*) ..... Nov. 19
General Electric sells pool to Formosa (*R*) ..... May 26
General Electric to build boiling reactor for RWE (*R*) ..... Nov. 25
General Electric to build ITR reactor (*R*) ..... May 26
General Electric wins SENN bidding with Ebasco (*R*) ..... Oct. 25
How modern is American industry? ..... Oct. 65
Lockheed Aircraft Co. begins operations at Georgia Labs (*R*) ..... July 27
Martin Co. reorganizes; Rauth new head of A-division (*R*) ..... Aug. 27
Metals & Controls Corp. completes new lab addition (*R*) ..... June 27
Metals & Controls Corp. sets A-sales record; figures (*R*) ..... Mar. 27
Metals & Controls Corp. top officials resign (*R*) ..... Aug. 28
Modernizing a modern industry ..... Oct. 61
Much of new Pacific Gas & Electric Co. capacity after '65 to be nuclear: Dreyer (*R*) ..... May 27
Nuclear Development Corporation has new quarters, expanding Pawling facilities (*R*) ..... Oct. 31
Nuclear Development Corporation would pool its U. S. Belgian research (*R*) ..... Apr. 26
Pacific Gas & Electric Co. announces 60-Mw(e) Humboldt Bay, GE, reactor (*R*) ..... Mar. 17
Radiation Products Co.—AEC orders isotope work halted for infractions (*R*) ..... Mar. 27
Suppliers to Shippingport (*PM*) ..... Apr. 118
Texas Co. completes radiation research lab (*R*) ..... Oct. 31
Th conversion services of U. S. companies ..... Aug. 101
Union Carbide Co. stretches out Stirling Forest building program (*R*) ..... June 27
Westinghouse agrees on terms for SELNI reactor (*R*) ..... Feb. 25
Westinghouse establishes Westinghouse International Atomic Power Co. (*R*) ..... Oct. 30
Westinghouse invents organic fluid-bed reactor for Burlington (*R*) ..... Nov. 24
Westinghouse to supply water reactor for *Seawolf* (*R*) ..... Feb. 26
Components, Reactor
Comment on "simulating nuclear blast effects." ..... Mar. 78
Designing for blast protection. F. Prozel ..... Oct. 82
Direct conversion with fuel cells? (*TA*) ..... July 110
Engineering the reactor plant ..... Apr. 57
Fast-breeder power reactors: where does U. S. program stand? L. Koch ..... Mar. 68
Power-reactor control the world around—responses to a NUCLEONICS questionnaire May 74
Radiation-resistant motors for nuclear aircraft controls. R. Fries (*NE*) ..... July 103
Simulating nuclear blast effects. J. Bohannon, W. Baker ..... Mar. 74
Sodium component development encouraged (*R*) ..... June 25
Spiral fuel element for gas-cooled reactors. R. Dahlberg, T. Evans (*NE*) ..... Apr. 106
Computers and Computation
Electrical analog solves reactor design problems. S. Nagao (*NE*) ..... Jan. 88
Magnetic tape simplifies handling of nuclear data. D. Halfhill ..... Dec. 55
Xenon-poisoning computer. J. Paul, J. Cox (*CS*) ..... May 97
Congressional Committee, Joint, on Atomic Energy
Agrees with AEC to speed up reactor program (*R*) ..... July 17
Bars AEC buyback plan for Pu (*R*) ..... Apr. 18
Democrats seek space policy control for AEC (*R*) ..... Mar. 20
Disputing reactor leadership shifting away from AEC (*R*) ..... Aug. 22
Durham, Price denounce Eisenhower ANP decision (*R*) ..... Apr. 22
$400-million construction bill passed by Congress (*R*) ..... Aug. 17
Gets EEI recommendations, flock of 10-yr programs (*R*) ..... Apr. 20
Gets Euratom bill; fuel cycle terms set (*R*) ..... July 24
Harmony talks start with AEC (*R*) ..... Jan. 20
Informal accord reached on program with AEC (*R*) ..... Aug. 18
JCAE sets up outer space propulsion subcommittee (*R*) ..... Feb. 24
May act in Budget Bureau holdback problem (*R*) ..... May 17
Still silent on AEC talks; Durham threatens action (*R*) ..... Apr. 17
202 hearings show foreign demands forcing acceleration (*R*) ..... Mar. 17
Votes doubling of AEC '59 program (*R*) ..... July 22
Containment, Reactor
Comment on "simulating nuclear blast effects." ..... Mar. 78
Designing for blast protection. F. Prozel ..... Oct. 82
Simulating nuclear blast effects. J. Bohannon, W. Baker ..... Mar. 74
Controls, Remote (See *Remote controls and handling apparatus;* and *Control systems, reactor*)
Control Systems, Reactor
Ag-In-Cd could replace Hf for PWR control rods. I. Cohen, *et al.* (*NE*) ..... Aug. 122
A look ahead to tomorrow in power reactor control. E. Mann ..... May 78
AEC seeks new control-rod materials (*R*) ..... Apr. 25
AEC spurs control-rod development (*R*) ..... Apr. 25
Control rod drives. W. Kann, J. Harrer ... May 84; (*also*) Control rod drive. C. Linnert (*LE*) ..... Oct. 120
Control rod materials. D. Dunning, W. Ray ..... May 88
Fluid poison control of boiling water reactors. J. Thie ..... May 82
Power reactor control ..... May 61
Power-reactor control the world around—responses to a NUCLEONICS questionnaire May 74
Reactor control philosophies. M. Schultz May 62
Reactor control strategies ..... May 71
Special safety devices. N. Huston, N. Miller ..... May 86
Spectral shift control. M. Edlund, G. Rhode ..... May 80
Today's control design. J. MacPhee ..... May 66
Coolants, Reactor (See also *Nuclear reactors;* and *Heavy water*)
Effects of gamma radiation on organic fluids and lubricants. W. Rice (*NE*) ..... Oct. 112
Test loop for determining burnout heat flux. W. Milich, E. King (*NE*) ..... Apr. 108
Costs (See *Economics*)
Counters (See *Instruments, detection*)
Critical Facilities (See also *Nuclear reactors*)
Critical-assembly booby traps. H. Paxton ..... Mar. 80
Critical facilities for basic physics. H. Paxton ..... Dec. 42
Critical facilities for reactor design. W. Redman ..... Dec. 40
Critical facilities tomorrow ..... Dec. 43
High-temperature critical facility. J. Bistline, C. Hofmann ..... Dec. 46
NUCLEONICS survey of operating critical facilities in the U. S. ..... Dec. 44
Oxide on catcher foils spoils power measurements. J. Renaker, *et al.* (*NE*) ..... Feb. 127
Planning ... and operating a critical facility. F. Jankowski, J. Chastain ..... Dec. 48
The APPR zero-power experiments. J. Noaks ..... Dec. 51
Cross Sections, Nuclear (*see Reactor physics*)
Crystals (See *Instruments, detection, scintillation*)
Cuba
Cuba schedules AMF boiling power reactor near Havana (*R*) ..... Sept. 28
Czechoslovakia
Czechoslovakia will start first power reactor at Bohunice (*R*) ..... June 26

D

Damage, Radiation (See *Radiation effects;* and *Nuclear reactors, materials*)
Data Sheets
Attenuation of γ-rays from an infinite plane. M. Chasanov, M. Shatskes ... June 63; (*corr.*) Attenuation misinterpreted. M. Chasanov, M. Shatskes (*LE*) ..... Oct. 121
Fission-product yields from U, Th and Pu. S. Katcoff ... Apr. 78; (*corr.*) Fission confusion. S. Katcoff (*LE*) ..... July 115
Gamma-ray attenuation with buildup in water. D. Chappell ..... July 80
Radionuclides arranged by gamma-ray energy. G. Smith, D. Farmelo ..... Feb. 80
Shielding-glass buildup factors. J. Lindner ..... Oct. 77
Thermal-neutron data for the elements. M. Davis, D. Hauser ... Mar. 87; (*corr.*) Datum correction. S. Menkes (*LE*) ..... Oct. 120
Decontamination
Recent advances in ultrasonic decontamination. R. Rod (*NE*) ..... July 104
Denmark
Danatom set up for applied nuclear research (*R*) ..... Apr. 26
Denmark water-boiler operating; shown on aerial photo of Risø (*R*) ..... Sept. 24
Detectors (See *Instruments, detection*)
Dosimetry
Cellophane dosimetry found unprecise (*AR*) ..... June 102
Energy discrimination in gamma-dose evaluation. L. Kocher (*IM*) ..... Nov. 151
Gamma measurement ..... Sept. 84
New film badge enables cheaper X-ray monitoring. L. van Stekelenburg (*CS*) ..... June 83
Photovoltaic gamma-ray dosimeter. J. Moody, *et al.* (*IM*) ..... Oct. 101
Polyvinyl chloride—new high-level dosimeter. C. Artandi, A. Stonehill (*AR*) ..... May 118
Polymer degradation—wide-range dosimeter. P. Feng (*AR*) ..... Oct. 114
Standard sources for chamber calibrations (*AR*) ..... Nov. 184

E

Economics
A low-cost heat reactor ..... Feb. 69
AEC reports to Congress on 2 dual-purpose production reactors (*NE*) ..... May 105
AEC slashes isotope prices 90–99 % (*R*) ..... May 27
Blending versus re-enrichment. D. Kallman, J. Brennan (*NE*) ..... July 101
Charting a course for nuclear power development. K. Cohen ..... Jan. 66
EBWR run up to 62 Mw; cost consequences (*R*) ..... Apr. 25
Economic A-power seen by 1980 by NPA (*R*) ..... Aug. 27
From Stagg Field to Shippingport (*Edit*) ..... Jan. 45
How modern is American industry? ..... Oct. 65
Modernizing a modern industry ..... Oct. 61
Nuclear heat for paper mill? G. Perazich ..... Feb. 68
Pricing enriched uranium. H. Hollister, A. Burington ..... Jan. 54
Radiation applications in New York industry. A. Abrahams (*AR*) ..... Feb. 131
SENN winning bid, British losing bid costs analyzed (*R*) ..... Nov. 20
Shippingport power costs—what do they mean? ..... Apr. 60
Sizing up uncertainties in nuclear fuel costs ..... Jan. 50
Sporn sees atom coming into own in 1975 (*R*) ..... June 27
The economic situation as viewed by the AEC ..... Jan. 48
The market for heat reactors. K. Mayer ..... Feb. 66
The outlook for industrial heat reactors ..... Feb. 62
Trends in power generation—lessons for nuclear engineers. H. Roberts ..... July 76
Upping EBWR's power. J. DeShong, Jr. ..... June 68
Vitro sees $3-billion market abroad; details (*R*) ..... Feb. 28
Westinghouse billings, backlog up in 1957 (*R*) ..... Jan. 28
Where we stand today. J. Lane ..... Jan. 46
World instrument market seen $47-million in 1958 (*R*) ..... May 27
World nuclear programs ..... Sept. 62
Zircaloy vs stainless: a cost comparison (*NEN*) ..... Apr. 104
Editorials
Acceleration ..... Feb. 61
And now, outer space (*Edit*) ..... Mar. 61
Candor before Geneva ... Apr. 50; *also* East-West open house. A. Kramish ..... June 109
From Stagg Field to Shippingport ..... Jan. 45
Good luck, Mr. McCone! ..... July 61
Modernizing a modern industry ..... Oct. 61
Power breeding as a national objective. A. Weinberg ... Aug. 75; *also* Fast breeders for power. R. Stanford ..... Nov. 210
Education (See also *Meetings*)
Cornell plans 2-in-1 teaching reactor (*R*) ..... Mar. 25
JCAE would aid universities on reactor insurance (*R*) ..... Aug. 27
MIT sets up Nuclear Engineering Department (*R*) ..... Mar. 27
Reactor indemnity aid bill passed (*R*) ... Sept. 157
Egypt
Egypt reported getting delivery of Russian research reactor (*R*) ..... June 26
Electronics (See *Instruments, electronic*)
England (See *Britain*)
Equipment
Atomfair and three meetings mark 1958 nuclear congress ..... Feb. 77
Euratom
Armand named head, other Commissioners named (*R*) ..... Feb. 25

Key to abbreviations: (*R*) = Roundup; (*Edit*) = an Editorial; (*CS*) = Cross Sections; (*NE*) = Nuclear Engineering; (*LE*) = Letters to the Editor; (*TA*) = Technical Advances; (*AR*) = Applied Radiation; (*NEN*) = Nuclear Engineering Notes; (*RR*) = Reactor Roundtable; (*TH*) = Thermonucleonics; (*IM*) = Instrumentation and Measurements.

Euratom bill on Hill; fuel cycle terms set (*R*). July 24
Euratom making strides in setting up machinery (*R*). Nov. 17
Euratom ratified by Dutch, last to do so, treaty in force (*R*). Jan. 22
Euratom satisfied with U. S. agreement; guarantees modified (*R*). Oct. 24
Euratom talks a success; ratification next step (*R*). May 20
Joint U. S. program clears JCAE, both Houses (*R*). Sept. 152
Prospects brighten for Congress' OK; industry urges flexibility (*R*). Aug. 20
Reactor plan to be ready by June (*R*). Mar. 19
Third-party liability solution vital (*R*). Nov. 23
U. S. agreement is industry hope for sales (*R*). June 17
U. S. aid weighed in staff talks (*R*). Apr. 19
European Nuclear Energy Agency
Insurance group proposes liability solution (*R*) Oct. 28
OEEC considers reactor in Britain, joint operation of Halden (*R*). May 25
OEEC forms atom unit, ENEA; Eurochemic founded also (*R*). Jan. 22
OEEC studying third-part liability (*R*). Mar. 26
Pierre Huet named staff director of ENEA (*R*) Feb. 25
Twelve countries to operate Halden (*R*). July 26

F

Fission (See *Nuclear reactors;* and *Reactor physics*)
Fissionable Materials (See *Fuels*)
Fission Products (See *Isotopes, gross fission products*)
Foldouts
NUCLEONICS reactor file No. 4—reactors on the line; VBWR. Feb. facing 76
NUCLEONICS reactor file No. 5—reactors on the line; PWR. Apr. facing 56
NUCLEONICS reactor file No. 6—reactors on the line; ORR. Aug. facing 120
Food Processing (See *Radiation processing*)
France
EL-3 reach« full power (*R*). May 25
France announces EL-4, D_2O-moderated, gas-cooled, at Geneva (*R*). Sept. 28
France going ahead on diffusion plant; Euratom reactions (*R*). May 25
France plans fuel modifications (Geneva—1958). Sept. 101
G-2 critical; 4 new projects: Alize, Pegase, Brenda, Rapsodie (*R*). Aug. 19
Grenoble research center opened (*R*). Apr. 26
Melusine critical at Grenoble (*R*). Aug. 26
World nuclear programs (Geneva—1958). Sept. 62
Fuel Cycles (See also *Fuels and fuel elements, reactor*)
Blending versus re-enrichment. D. Kallman, J. Brennan (*NE*). July 101
Fuel cycles (Geneva—1958). Sept. 104
Fuel for the world's reactors. Aug. 77
Plutonium recycle test reactor. R Fryer. Jan. 62
Poison self-shielding (Geneva—1958). Sept. 94
Power breeding as a national objective. A. Weinberg (*Edit*). Aug. 75; *also* Fast breeders for power. R. Stanford (*LE*). Nov. 210
Predicting reactivity at high burnup. B. Wolfe (*NE*). Mar. 116
Sizing up uncertainties in nuclear fuel costs. Jan. 50
Spectral shift control. M. Edlund, G. Rhode May 80
The case for enriched uranium. C. Starr. Aug. 86
The case for natural uranium. J. Menke. Aug. 88
Fuel Reprocessing
Decontamination of molten Th-U (*NEN*). Oct. 104
Fuel reprocessing series 3—treatment and disposal of fuel-reprocessing waste. J. Lieberman. Feb. 82
New approach to fuel processing (*NEN*). Nov. 158
NH_4F—versatile reagent for zirconium fuels. A. McCord, D. Spink (*CS*). Feb. 94
Permissible weight concentrations for enriched uranium. C. Pelletier (*NE*). Oct. 111
Fuels and Fuel Elements, Reactor (See also *Breeding, Fuel cycles, Fuel reprocessing* and *Uranium*)
Argonne building two big fuel-study facilities (*R*). June 21
AEC launches fuel-cycle research program (*R*) Nov. 23
AEC stresses fuel cycle (*R*). Apr. 17
AEC's fuel program. R. Dalzell, *et al*. Aug. 78
Burst element at Borax-4 permits studies on activity, locating (*R*). Apr. 25
EBWR gets deliberately impaired fuel sample; activity very low (*R*). June 25
Fast-breeder power reactors: where does U. S. program stand? L. Koch. Mar. 68
Fission-product yields from U, Th and Pu. S. Katcoff. Apr. 78; (*corr.*) Fission confusion. S. Katcoff (*LE*). July 115
Fuel for the world's reactors. Aug. 77
Fuel reprocessing series 3—treatment and disposal of fuel-reprocessing waste. J. Lieberman. Feb. 82
GE completes new plant for oxide-pellet rod (*R*). Mar. 25
How General Electric fabricates fuel elements for Dresden. M. Sanderson, P. Wright. Nov. 128
How Mallinckrodt converts enriched UF_6 to UO_2 powder. W. Leaders. Nov. 126
M & C completes new facility (*R*). June 27
M & C sets A-sales record; figures (*R*). Mar. 27
National Lead equipping Albany, N. Y., plant to make fuel elements (*R*). July 28
New approach to electrolytic U. L. Niedrach, *et al*. Jan. 64
NH_4F—versatile reagent for zirconium fuels. A. McCord, D. Spink (*CS*). Feb. 94
Nuclear fuels (Geneva—1958). Sept. 98
Nuclear fuel supply (Geneva—1958). Sept. 65
Oak Ridge Y-12 accidental excursion, June 16, 1958. Nov. 138
Olin, American Lava open fuel element plants (*R*). Oct. 31
OMRE gets Al-clad core loading (*R*). Oct. 29
Plutonium. Aug. 96
Reactor core design. Apr. 62
Reactor core test facility being built by AI (*R*) June 27
Safety of magnesium canning for CO_2-cooled reactors. M. Salesse (*NE*). Feb. 123
Spiral fuel element for gas-cooled reactors. R. Dahlberg, T. Evans (*NE*). Apr. 106
SRE plans core-loading experiments (*R*). May 26
Sylcor developing perforated wafer element (*R*) Apr. 23
Th conversion services of U. S. companies. Aug. 101
Thorium. B. Manowitz. Aug. 91
The case for enriched uranium. C. Starr. Aug. 86
The case for natural uranium. J. Menke. Aug. 88
U^{233} reactor fuel plans (*NEN*). Nov. 158
Uranium alloys and dispersions. R. Noland, *et al*. Aug. 89
Uranium oxide experience. J. Danko. Aug. 90
U. S. exhibits reactor with unique fuel-moderator (*NE*). Aug. 116
U. S. export policies. M. Kratzer. Aug. 82
Fusion (See *Thermonuclear power*)
Aerojet-General acquires complete ownership of AGN subsidiary (*R*). Jan. 27

G

Gages (*See Gages, radioactive;* and *Instruments, laboratory*)
Gages, Radioactive
Gages + computers → sophistication (*AR*). Apr. 115
Putting safety into gaging-source designs. G. Foster (*AR*). Feb. 128
Gamma Rays (see also *Shielding*)
A matrix to correct for scintillator escape effects. E. Rawson, D. Cormack (*IM*). Oct. 92
Attenuation of γ-rays from an infinite plane. M. Chasanov, M. Shatzkes. June 63; (*corr.*) Attenuation misinterpreted. M. Chasanov, M. Shatzkes (*LE*). Oct. 121
Energy discrimination in gamma-dose evaluation. L. Kocher (*IM*). Nov. 151
Gamma-ray attenuation with buildup in water. D. Chappell. July 80
New capture gamma ray measurements (*NEN*) Jan. 85
Radionuclides arranged by gamma-ray energy. G. Smith, D. Farmelo. Feb. 80
Shielding-glass buildup factors. J. Lindner. Oct. 77
Germany, East
Construction of power reactor begun; 1st research reactor operating (*R*). Jan. 25
Germany, West
Construction starting on AVR at Julich (*R*). Aug. 26
Duren site changed to Julich (*R*). Jan. 25
4 design groups work on power reactors, 4 utility groups formed (*R*). Jan. 24
Frankfurt reactor critical (*R*). Feb. 25
Germany uses new fuel type (Geneva—1958). Sept. 101
Hamburg pool goes critical (*R*). Nov. 26
Hamburg reactor critical; 50-Mw(th) prototype ship plant planned (*R*). Nov. 26
Karlsruhe reactor is under construction (*R*). Jan. 24
Munich pool has gone critical (*R*). Jan. 24
Siemens plans modified Argonaut for Garching/Munchen (*R*). Nov. 26
Small power unit ordered (AEG); big one still planned (*R*). July 26
Smaller countries show interest in fusion (Geneva—1958). Sept. 71
West Berlin reactor goes critical; fuel details (*R*). Aug. 25
World nuclear programs (Geneva—1958). Sept. 62
Graphite (See *Fuels; Moderators;* and *Nuclear reactors, materials*)
Great Britain (See *Britain*)

H

Health Physics (See also *Dosimetry*)
A free-moving isodose-tracing machine. B. Green, J. Spinks (*CS*). Apr. 92
New exposure limits adopted by AEC (*R*). Jan. 27
New film badge enables cheaper X-ray monitoring. L. van Stekelenburg (*CS*). June 83
Nuclear-track technique for low-level Pu in urine. L. Schwendiman, J. Healy (*CS*). June 78
Permissible weight concentrations for enriched uranium. C. Pelletier (*NE*). Oct. 111
Pin-hole camera locates contamination (*CS*). July 97
Walk-in human counter. E. Anderson, *et al*. Aug. 106
Heat Transfer (See *Coolants, Nuclear reactors* and *Thermodynamics of nuclear plants*)
Heavy Water (See also *Coolants;* and *Moderators*)
AEC distribution policy liberalized: choice of lease, sale (*R*). Sept. 156
U. S. production 1,030 tons/yr, disclosed at Geneva (*R*). Sept. 28
Hot Laboratories
Atomfair and three meetings mark 1958 nuclear congress. Feb. 77
Hungary
Hungary to get Soviet help on first power reactor (*R*). June 26

I

Incidents, Nuclear (See *Safety*)
India
India Planning Commission agrees on 140-Mw power station (*R*). Mar. 27
Three-stage, 1,000-Mw(e) power station approved (*R*). Oct. 30
Industrial Applications of Radiation (See *Radiation applications*)
Industry (See also *Companies*)
Atom lobby proposed by Jackson (*R*). June 24
Better industry mood seen at Chicago talks (*R*) Apr. 22
Reaction to JCAE on Euratom program provisions (*R*). Aug. 20
Instruments, Detection
Instrumentation (Geneva—1958). Sept. 83
Neutron detectors for operation at 400° C. S. Kaufmann, L. Pahis (*CS*). Mar. 90
Neutron, gamma measurements for in-pile power monitoring. A. Lapsley (*CS*). Feb. 106
Sensitive measurement of pulse-amplifier gain. K. McCollom, *et al*. (*CS*). Jan. 74
Slow, simple 99-channel pulse-height analyzer. G. Jensen, *et al*. (*IM*). Oct. 100
Transistorized, portable spark counter. E. Laisk (*CS*). July 95
World market in 1958 seen at $47-million (*R*). May 27
Instruments, Detection, G-M & Proportional
A free-moving isodose-tracing machine. B. Green, J. Spinks (*CS*). Apr. 92
New proportional counters for gases and vapors. R. Wolfgang, C. Mackay. Oct. 69
Simple, inexpensive, automatic sample changer and recorder. E. Kempner, F. Bisbee (*CS*) June 87
Instruments, Detection, Ion Chamber
Measuring reactor spectra with thresholds and resonances. J. Trice. July 81
Miniature fission chamber. J. Trice (*CS*). July 84
Standard sources for chamber calibrations (*AR*) Nov. 184
Three-channel alpha-fission counter. F. White, J. Sheffield (*CS*). Apr. 86
Instruments, Detection, Photographic & Optical
Pinhole camera maps beta-active deposits. L. Preuss, G. Jenkins (*IM*). Oct. 98
Instruments, Detection, Scintillation
A matrix to correct for scintillator escape effects. E. Rawson, D. Cormack (*IM*). Oct. 92
Beta-excited X-ray sources for scintillation-spectrometry calibration. J. Kerrisakes, *et al*. (*CS*). Jan. 80
Measuring γ-ray spectra with large plastic scintillators. G. Brownell, et al (*IM*). Dec. 68
Organic-glass scintillators. J. Downs, F. Smith (*CS*). Mar. 94
Plastic phosphor matrix for fast-neutron detection. B. Brown, E. Hooper, Jr. (*CS*). Apr. 96
Scintillation-counter analysis of EBWR radioactivity. S. Goslovich, *et al*. (*CS*). May 94
Scintillation counting (Geneva—1958). Sept. 84
Scintillation counting—1958. June 54
Shaping pulses for nuclear spectrometry. R. Chase. Nov. 116
Single-channel counter for carbon-14 and tritium. T. Hodgson, *et al*. (*CS*). July 89
Walk-in human counter. E. Anderson, *et al*. Aug. 106
What's new in counters? . . . scintillation track chambers. G. Reynolds. June 60
What's new in photomultipliers? June 58

Instruments, Electronic
Multitracer analyzer (*TB*) ..... July 98
Sensitive measurement of pulse-amplifier gain. K. McCollom, *et al.* (*CS*) ..... Jan. 74
Shaping pulses for nuclear spectrometry. R. Chase ..... Nov. 116
Silicon diodes improve reactor period meters. W. Brookshier (*CS*) ..... Aug. 108
Slow, simple 99-channel pulse-height analyzer. G. Jensen, *et al.* (*IM*) ..... Oct. 100
What's new in electronics? ..... June 56
Instruments, Reactor
A way to stabilize reactor instrument power supplies. J. Parnell, C. Sundin (*NE*) .. July 102
Magnetic tape simplifies handling of nuclear data. D. Halfhill ..... Dec. 55
Measuring reactor spectra with thresholds and resonances. J. Trice ..... July 81
Miniature fission chamber. J. Trice (*CS*) July 84
Neutron detectors for operation at 400° C. S. Kaufmann, L. Pahis (*CS*) ..... Mar. 90
Neutron, gamma measurements for in-pile power monitoring. A. Lapsley (*CS*) .. Feb. 106
Silicon diodes improve reactor period meters. W. Brookshier (*CS*) ..... Aug. 108
Insurance
AEC extends indemnity to contractors (*R*) .... Feb. 27
AEC shucks off foreign liability issue (*R*) June 24
British bill would make insurance compulsory (*R*) ..... Mar. 26
Canada's insurance firms form pool (*R*) .. July 26
European insurors in pool agreement (*R*) .. Apr. 20
French insurance pool set up (*R*) ..... Mar. 26
GE, SENN working out liability problems, solution vital also to Euratom (*R*) ..... Nov. 23
Godwin urges world convention on A-ship liability (*R*) ..... Oct. 30
OEEC group proposes liability solution (*R*) .. Oct. 28
Savannah, university reactor indemnity bills passed (*R*) ..... Sept. 157
Third-party liability a main Euratom problem (*R*) ..... Nov. 17
International Atomic Energy Agency
Board proposes larger budget (*R*) ..... Aug. 26
Cole names top staff; U. S. offers aid (*R*) .. Mar. 26
Disillusionment clouds second General Conference (*R*) ..... Oct. 26
Ionization Chambers (See *Instruments, detection, ion chamber*)
Iran
Iran buys AMF pool (*R*) ..... Aug. 25
Irradiation Facilities and Techniques (See also *Accelerators; Isotopes; Nuclear reactors, test;* and *Radiation applications*)
Gamma-dose enhancement from neutron capture in Cd. D. Kline, F. Remick (*CS*) .. Mar. 97
Gamma-irradiation facilities in the United States. R. Ellis, Jr. (*AR*) ..... July 108
Radiation processing of foods in Britain. B. Coleby, *et al.* (*AR*) ..... Nov. 188
Isotopes (See also *Isotopes, gross fission products; Isotopes, labeled compounds; Isotopes, radioactive; Isotopes, stable; Radiation applications;* and *Tracers*)
AEC launches broad 1st-phase development effort (*R*) ..... Sept. 154
AEC off on big program to speed radiation use (*R*) ..... Oct. 21
AEC prices slashed 90–99 % (*R*) ..... May 27
Isotopes, Gross Fission Products (See also *Waste disposal*)
Fission-product yields from U, Th and Pu. S. Katcoff ..... Apr. 78
Isotopes, Labeled Compounds
Tritium tracing—a rediscovery ..... Mar. 62
Isotopes, Radioactive
Applied radiation (Geneva—1958) ..... Sept. 86
Beta-excited X-ray sources for scintillation-spectrometry calibration. J. Kereiakes, *et al.* (*CS*) ..... Jan. 80
Keysort cards for nuclear data. J. Neissel (*IM*) ..... Nov. 142
Mock iodine for I^{131} calibrations (*AR*) ... Aug. 134
Neutron spectra from mock-fission sources. E. Tochilin, R. Alves (*IM*) ..... Nov. 145
Paternity dispute (element 102) (*TB*) .... Aug. 111
Preparation of xenon-133 radiography sources from spent fuel. E. Wilson, *et al.* (*AR*) . Apr. 110
Radioisotopes in Russia. H. Gomberg (*AR*) .. Aug. 136
Radionuclides arranged by gamma-ray energy. G. Smith, D. Farmelo ..... Feb. 80
Tritium tracing—a rediscovery ..... Mar. 62
Israel
Israel government, industry join forces, set up Isratom (*R*) ..... Sept. 154
Italy
Contract with NPPC signed for broad collaboration (*R*) ..... June 17
GE-Ebasco team wins (*R*) ..... Oct. 25
Italy buys Triga for CNRN, Rome (*R*) ... Oct. 29
Italy envisions nuclear ship; Fiat, Ansaldo collaborating (*R*) ..... July 26
Italy to start A-sub, founds an atomic industrial forum (*R*) ..... Oct. 30
Nuclear research center at Pisa started; Ispra progress (*R*) ..... Mar. 26
SIMEA job hits snag; AGIP, SIMEA switch contract (*R*) ..... Mar. 19
World nuclear programs (Geneva—1958) . Sept. 62

J

Japan
Atomic power program taking shape (*R*) . May 22
Japan asks British bids on first power plant (*R*) ..... Mar. 19
Japan delays UK Calder-type contract; Miki reviewing (*R*) ..... Oct. 32
Japan plans small atomic training ship (*R*) ... Aug. 26
Japan signs bilaterals with U. S., U. K.; U-provisions (*R*) ..... July 26
Japan to buy U. S. PWR; designs D_2O research unit (*R*) ..... Feb. 25
Reaction to UK decision make Pu in civil stations (*R*) ..... July 27
Smaller countries show interest in fusion (Geneva—1958) ..... Sept. 71
U. S. bilateral amended on fuel provisions (*R*) ..... Nov. 26
World nuclear programs (Geneva—1958) Sept. 62
Joint Congressional Committee, (JCAE) (See *Congressional Committee, Joint, on Atomic Energy*)

K

Kinetics, Reactor (*See Reactor physics*)

L

Labeling and Labeled Compounds (See *Isotopes, labeled compounds*)
Letters to the Editor
Attenuation misinterpreted. M. Chasanov, M. Shatzkes ..... Oct. 121
Calibration aberration. C. Pfister ..... Mar. 128
Control-rod drive. C. Linnert ..... Oct. 120
Datum correction. S. Menkes ..... Oct. 120
Design makes the difference. S. Baron .. Aug. 146
Design makes the difference. L. Prem .. Aug. 146
East-West open house. A. Kramish ..... June 109
Facts of life—steel dept. F. Poss ..... Aug. 147
Fast breeders for power. R. Stanford ... Nov. 210
Fission confusion. S. Katcoff ..... July 115
Illustration credits. F. Culler ..... Mar. 128
Materials witnesses. W. Barton ..... May 129
Materials witnesses. L. Lukkason ..... May 129
The West is still golden. R. Bennett .... Feb. 150
VBWR = $2,500,000 +. J. Maider .... June 109
Liquid Metals (See *Coolants; Fuels;* and *Nuclear reactors, materials*)
Loops (See *Test facilities*)
Los Alamos Scientific Laboratory
Los Alamos' Project Rover. R. Schreiber .... July 70

M

Materials (See *Nuclear reactors, materials*)
Mathematics (See *Computers and computations*)
Measurements (See also *Instruments*)
Beta-excited X-ray sources for scintillation-spectrometry calibration. J. Kereiakes, *et al.* (*CS*) ..... Jan. 80
NBS completes 10 of 15 U-isotope standards; to do Pu, Th (*R*) ..... Nov. 27
Neutron spectra from mock-fission sources. E. Tochilin, R. Alves (*IM*) ..... Nov. 145
Oxide on catcher foils spoils power measurements. J. Renaker, *et al.* (*NE*) ..... Feb. 127
Three-channel alpha-fission counter. F. White, J. Sheffield (*CS*) ..... Apr. 86
Medical Physics and Research (See also *Health physics*)
Simple, inexpensive, automatic sample changer and recorder. E. Kempner, F. Bisbee (*CS*) June 87
Meetings
Atomfair and three meetings mark 1958 nuclear congress ..... Feb. 77
Geneva—1958 ..... Sept. 61
Metallurgy (See *Fuels* and *Nuclear reactors, materials*)
Moderators, Reactor (See also *Heavy water*)
Effects of gamma radiation on organic fluids and lubricants. W. Rice (*NE*) ..... Oct. 112
Monitoring (See *Health physics* and *Instruments*)

N

Netherlands
Netherlands plans agricultural reactor (*R*) .... May 25
World nuclear programs (Geneva—1958) . Sept. 62
Neutrons
Cockcroft-Waltons—good neutron producers (*AR*) ..... Jan. 106
Gamma-dose enhancement from neutron capture in Cd. D. Kline, F. Remick (*CS*) . Mar. 97
Neutron detectors for operation at 400° C. S. Kaufmann, L. Pahis (*CS*) ..... Mar. 90
Plastic phosphor matrix for fast-neutron detection. B. Brown, E. Hooper, Jr. (*CS*) .. Apr. 96
Thermal-neutron data for the elements. M. Davis, D. Hauser ... Mar. 87; (*corr.*) Datum correction. S. Menkes (*LE*) ..... Oct. 120
What's new in scintillators? ..... June 54
Nomograms (See *Data sheets*)
Norway
Halden reactor components being installed (*R*) ..... Jan. 21
Heat reactor prospects abroad ..... Feb. 70
Norway plans zero-energy pool at Jener, IFA & Noratom to build (*R*) ..... Oct. 30
Twelve OEEC countries to operate Halden reactor (*R*) ..... July 26
Nuclear Chemistry (See *Radiochemistry*)
Nuclear Engineering (See *Nuclear reactors*)
Nuclear Physics (See *Physics* and *Reactor physics*)
Nuclear Power, Costs (See *Economics*)
Nuclear Reactors (See *Components; Foldouts; Fuel; Instruments, reactor; Moderators; Nuclear reactors, concepts; Nuclear reactors, design & construction; Nuclear reactors, materials; Nuclear reactors, operation; Nuclear reactors; power, experimental; Nuclear reactors, power, full-scale; Nuclear reactors, process heat; Nuclear reactors, production; Nuclear reactors, propulsion, aircraft; Nuclear reactors, propulsion, land; Nuclear reactors, propulsion, marine; Nuclear reactors, research & training; Nuclear reactors, test; Nuclear reactors, radiation processing; Reactor physics; Subcritical reactors; Thermodynamics;* etc.)
Nuclear Reactors, Concepts
Advanced sodium design from U. S. (Geneva—1958) ..... Sept. 82
AEC reactor officials see thermocouple reactors promising in 10 years (*R*) ..... June 27
AEC reports to Congress on gas-cooled power reactors (*NE*) ..... May 104
Basic principles of nuclear rockets. J. Grey .. July 62
First details of A.I.'s epithermal Th breeder. R. Beeley (*NE*) ..... Nov. 162
Gaseous-fuel reactor. S. Baron (*RR*) .... Aug. 128
General Atomic working on direct-conversion reactor (*R*) ..... July 25
Germans patent granular-graphite-cooled reactor (*R*) ..... Apr. 26
Germans working on pebble-bed reactors (*R*) .. June 23
LMFR variation proves wanting (*NEN*) . Nov. 158
New concepts; dust fueled, evaporatively cooled, nuclear superheat (*R*) ..... Apr. 22
New reactor concepts (Geneva—1958) .. Sept. 78
Organic-cooled D_2O reactor (Geneva—1958) .. Sept. 80
Rocket-reactor design. M. Levoy, J. Newgard ..... July 66
Sanderson & Porter, Alco developing pebble-bed reactors (*R*) ..... June 19
Siemens-Schuckert, Germany, patents thermocouple reactor system (*R*) ..... Feb. 25
Spectral shift control. M. Edlund, G. Rhode May 80
Spiral fuel element for gas-cooled reactors. R. Dahlberg, T. Evans (*NE*) ..... Apr. 106
Status of world's power reactors on eve of Geneva (table) (*R*) ..... Aug. 24
Temperature-zoned reactor. F. Clark, C. Klahr (*RR*) ..... May 114
Tennessee Valley Authority investigating gas-cooled, pebble-bed (*R*) ..... Sept. 153
TVA may enter gas reactor bidding (*R*) .. Oct. 27
U. S. designs gas-cooled reactors (*NE*) .. Aug. 118
U. S. interest grows in gas-cooled designs (*NE*) Dec. 72
Westinghouse invents organic fluid-bed for Burlington (*R*) ..... Nov. 24
Westinghouse working on thermocouple reactor for auxiliary nuclear missile propulsion (*R*) ..... Aug. 25
Nuclear Reactors, Design & Construction
Aircraft shield test reactor. J. Nance, L. Perry ..... Jan. 58
Bigger and better swimming-pool reactors. P. Garay (*NE*) ..... June 99
Comment on "simulating nuclear blast effects." ..... Mar. 78
Criteria for test reactors. B. Wolfe .... Nov. 135
Critical facilities for reactor design. W. Redman ..... Dec. 40
EBR-1 starts up with Mark III core (*NEN*) . Feb. 122
Engineering the reactor plant ..... Apr. 57
Flux flattening improves output. M. Duret, W. Henderson (*NE*) ..... Nov. 168
Gas-cooled reactor for the South of Scotland Electricity Board. P. Grant (*NE*) ..... May 108
Gaseous-fuel reactor. S. Baron (*RR*) .... Aug. 128
Hazards evaluation of the Yankee reactor (*NE*) Mar. 112
Los Alamos' Project Rover. R. Schreiber .... July 70
NUCLEONICS reactor file No. 4—reactors on the line; VBWR ..... Feb. facing 76
NUCLEONICS reactor file No. 5—reactors on the line; PWR ..... Apr. facing 56
NUCLEONICS reactor file No. 6—reactors on the line; ORR ..... Aug. facing 120
Power-reactor control the world around—responses to a NUCLEONICS questionnaire . May 74
Planning . . . and operating a critical facility. F. Jankowski, J. Chastain ..... Dec. 48
Reactor core design ..... Apr. 62
Reactor projects (Geneva—1958) ..... Sept. 72
Rocket-reactor design. M. Levoy, J. Newgard ..... July 66
Shielding the Enrico Fermi fast breeder reactor. H. Hungerford, R. Mantey .... Nov. 120
Simulating nuclear blast effects. J. Bohannon, W. Baker ..... Mar. 74
Temperature-zoned reactor. F. Clark, C. Klahr (*RR*) ..... May 114
The APPR zero-power experiments. J. Noaks Dec. 51
Thermal design criteria for pressurized-water reactors. W. Jacobi, *et al.* ..... Nov. 130
Thermodynamics of gas-cooled reactors. G. Melese ... Feb. 72; *also* VBWR = $2,500,000 +. J. Maider (*LE*) ..... June 109
U. S. designs gas-cooled reactors (*NE*) ... Aug. 118

Key to abbreviations: (*R*) = Roundup; (*Edit*) = an Editorial; (*CS*) = Cross Sections; (*NE*) = Nuclear Engineering; (*LE*) = Letters to the Editor; (*TA*) = Technical Advances; (*AR*) = Applied Radiation; (*NEN*) = Nuclear Engineering Notes; (*RR*) = Reactor Roundtable; (*TH*) = Thermonucleonics; (*IM*) = Instrumentation and Measurements.

U. S. exhibits reactor with unique fuel-moderator (*NE*)....Aug. 116
Void-induced power distortion in boiling-water reactors. J. Weil (*NE*)....June 90
Xenon spatial oscillations. D. Randall, D. St. John....Mar. 82

Nuclear Reactors, Materials (See also *Control systems, reactor; Coolants, reactor; Fuels and fuel elements, reactor; Moderators, reactor; Radiation effects; Shielding; Test facilities;* and individual elements)
AEC closing Niagara boron-10 plant (*R*)..Feb. 27
AEC shifts distribution of B^{10} to Chicago (*R*)..July 27
Boron steel for control rods and thermal shields. N. Balai (*NE*)....Jan. 100
Charting a course for nuclear power development. K. Cohen....Jan. 66
Control rod materials. D. Dunning, W. Ray....May 88
Effects of gamma radiation on organic fluids and lubricants. W. Rice (*NE*)....Oct. 112
High temperature materials progress (*NEN*)..Aug. 114
How General Electric fabricates fuel elements for Dresden. M. Sanderson, P. Wright....Nov. 128
How Mallinckrodt converts enriched UF_6 to UO_2 powder. W. Leaders....Nov. 126
Materials (Geneva—1958)....Sept. 108
Radiation-resistant reactor insulation (*NEN*)..Apr. 104
Reactor facts....Apr. 109
Shielding the Enrico Fermi fast breeder reactor. H. Hungerford, R. Mantey....Nov. 120
Test loop for determining burnout heat flux. W. Milich, E. King (*NE*)....Apr. 108
Titanium-oxygen reactions studied (*NEN*)..Oct. 106
What price reactor materials? M. Judkins (*NE*)..Jan. 96; (*also*) Materials witnesses. L. Lukkason, W. Barton (*LE*)....May 129
Zircaloy vs stainless: a cost comparison (*NEN*)..Apr. 104
Zircaloy vs stainless: how designers feel (*NEN*)..June 89

Nuclear Reactors, Operation
A look ahead to tomorrow in power reactor control. E. Mann....May 78
Eight reactor types—a thermodynamic comparison. S. Baron...June 64; *also* Design makes the difference. L. Prem (*LE*)..Aug. 146; *reply*, S. Baron....Aug. 146
Fluid poison control of boiling water reactors. J. Thie....May 82
Nucleonics reactor file No. 5—reactors on the line; PWR....Apr. facing 56
Operating and design experience abroad (Geneva—1958)....Sept. 76
PWR goes on the line (*NE*)....Jan. 86
Reactor control philosophies. M. Schultz....May 62
Reactor control strategies....May 71
Reactor exclusion areas—can they be eliminated? G. Tait....Jan. 71
Reactor projects (Geneva—1958)....Sept. 72
Safety of magnesium canning for CO_2-cooled reactors. M. Salesse (*NE*)....Feb. 123
Special safety devices. N. Huston, N. Miller....May 86
Startup, operation and testing....Apr. 69
The engineering test reactor—a status report. R. Doan (*NE*)....Jan. 102
Today's control design. J. MacPhee....May 66
Wigner energy release for BEPO (*NEN*)..July 99
Xenon spatial oscillations. D. Randall, D. St. John....Mar. 82

Nuclear Reactors, Policy
Acceleration, subsidy backed in NU survey (*R*)..Feb. 17
AEC, JCAE agree to speed up reactor program (*R*)....July 17
AEC-JCAE harmony talks start (*R*)....Jan. 20
AEC sets 1-yr plan; AEC, JCAE still silent on talks (*R*)....Apr. 17
Budget Bureau fights AEC plans; JCAE may act (*R*)....May 17
EEI task force reactor recommendations, others, to JCAE (*R*)....Apr. 20
$400-million atom bill passes Congress despite President (*R*)....Aug. 17
Informal accord on program reached by AEC, JCAE (*R*)....Aug. 18
McAfee, EEI, denies need for acceleration (*R*)..May 18
McCone names reactor advisory group (*R*)....Nov. 25
Power shifting away from AEC; JCAE, Budget disputing (*R*)....Aug. 22
202 hearings show foreign demands forcing acceleration (*R*)....Mar. 17

Nuclear Reactors, Power, Experimental
ACF gets RCPA assignment (*R*)....Apr. 25
Air Force orders first military stationary power reactor, bids asked; Pentagon wants more (*R*)....Nov. 25
Allis-Chalmers plans nuclear superheat for Northern States boiling water reactor (*R*)..Apr. 22
ALPR goes critical (*R*)....Sept. 154
APPR-1a order goes to Alco (*R*)....July 25
Arbor aborted (*R*)....July 25
Army authorizes Alaskan APPR (*R*)....Jan. 26
AEC, ACF sign contract for RCPA construction (*R*)....July 25
Boiling-water-reactor instability. J. Thie (*NE*)....Mar. 102
Burst fuel element permits studies (*R*)...Apr. 25
Consumers Public Power District breaks ground at Hallam, Neb., for Sheldon Station (sodium graphite reactor) (*R*)....Aug. 27
EBR-1 critical again, with Mark-III core (*R*)..Jan. 26
EBR-1 starts up with Mark III core (*NEN*)..Feb. 122
EBR-2 construction phase finally started (*R*)..Apr. 25
EBWR power to be boosted to 100-Mw(th) (*R*)....Oct. 23
EBWR run up to 62 Mw (*R*)....Apr. 25
EBWR turbine radioactivity very low with bad fuel sample (*R*)....June 25
Fast-breeder power reactors: where does U. S. program stand? L. Koch....Mar. 68
First details of A.I.'s epithermal Th breeder. R. Beeley (*NE*)....Nov. 162
Heat reactor prospects abroad....Feb. 70
HRE-2 blanketless, running "remarkably" well: Weinberg (*R*)....Aug. 21
HRE-2 fuel leak forces shutdown, Weinberg tells JCAE (*R*)....May 26
HRE-2 operated 80 hours at zero power (*R*)..Feb. 26
Mark-III makes EBR-I stable (Geneva—1958)..Sept. 97
New larger turbine may be installed at Vallecitos, PG & E says (*R*)....Mar. 25
Nucleonics reactor file No. 4—reactors on the line; VBWR....Feb. facing 76
Piqua jeopardized by tentative adverse ACRS site report (*R*)....Oct. 27
Plutonium recycle test reactor. R. Fryar..Jan. 62
PuRR phase-1 construction contract let to J. P. Hopkins Co. (*R*)....May 17
SRE reaches full power (*R*)....June 28
Upping EBWR's power. J. DeShong, Jr....June 68
Vallecitos getting pump for forced circulation (*R*)....Apr. 23
Vallecitos license change permits raising power (*R*)....Feb. 26
Wolverine project dies (*R*)....June 25

Nuclear Reactors, Power, Full-Scale
AEC reports to Congress on gas-cooled power reactors (*NE*)....May 104
Charting a course for nuclear power development. K. Cohen....Jan. 66
Commonwealth Edison Dresden Station 6–12 months ahead of schedule (*R*)....Apr. 23
Engineering the reactor plant....Apr. 57
From Stagg Field to Shippingport (*Edit*)..Jan. 45
Fuel job let to Makepeace-Nuclear Metals and Sylcor (*R*)....July 19
Gas-cooled reactor for the South of Scotland Electricity Board. P. Grant (*NE*)....May 108
Gas-cooled reactors still U.K. favorite (*NEN*)..May 102
Hazards evaluation of the Yankee reactor (*NE*)..Mar. 112
How General Electric fabricates fuel elements for Dresden. M. Sanderson, P. Wright....Nov. 128
Nucleonics reactor file No. 5—reactors on the line; PWR....Apr. facing 56
PWR goes on the line (*NE*)....Jan. 86
PWR goes to full power (*R*)....Jan. 17
PWR—meaning to reactor builders....Apr. 56
PWR—meaning to utilities....Apr. 55
PWR on utility duty; stability gratifying (*R*)..Mar. 19
PWR running on four loops, but at 60 Mw top (*R*)....Aug. 25
PWR—startup, operation and testing....Apr. 69
Reactor core design....Apr. 62
Rickover speaks of Shippingport....Apr. 54
Shielding the Enrico Fermi fast breeder reactor. H. Hungerford, R. Mantey....Nov. 120
Shippingport power costs—what do they mean?....Apr. 60
Sizing up uncertainties in nuclear fuel costs...Jan. 50
Sodium pump, fuel manipulator delivered (*R*)..Aug. 25
Suppliers to Shippingport (*PM*)....Apr. 118
The outlook for industrial heat reactors..Feb. 62
Thermal design criteria for pressurized-water reactors. W. Jacobi, *et al*....Nov. 130
The significance of Shippingport....Apr. 53
Vessel completed at Combustion (photo) (*R*)..June 22
Where we stand today. J. Lane....Jan. 46

Nuclear Reactors, Process Heat
A low-cost heat reactor....Feb. 69
AEC's industrial-heat program. J. Kaufmann, D. Stewart, Jr....Feb. 65
Heat reactor prospects abroad....Feb. 70
Michigan Chemical Co. interested in process-steam unit (*R*)....July 25
Nuclear heat for paper mill? G. Perasich....Feb. 68
The market for heat reactors. K. Mayer..Feb. 66
The outlook for industrial heat reactors..Feb. 62

Nuclear Reactors, Production
AEC orders GE to make final design (*R*)..Oct. 32
AEC reports to Congress on dual-purpose production reactors (*NE*)....May 105
Preliminary study completed (*R*)....Apr. 19

Nuclear Reactors, Propulsion, Aircraft
Aircraft shield test reactor. J. Nance, L. Perry....Jan. 58
Air Force to build Denver ANP r&d facility (*R*)....July 27
AEC renews contract with Pratt & Whitney (*R*)....Feb. 26
Eisenhower kills early plane, Democrats flay inaction (*R*)....Apr. 22
Flying reactor moved to Oak Ridge Tower facility (*R*)....May 26
Navy seeks Saunders-Roe Princess for testbed (*R*)....Apr. 26
Navy tells Martin to push atom seaplane (*R*)..Aug. 19

Nuclear Reactors, Propulsion, Land
Russians seen working on locomotives for operation by 1965 (*R*)....Nov. 26

Nuclear Reactors, Propulsion, Marine
All U. S. ship lines invited to send crew trainees (*R*)....Oct. 31
Approval for 20th–22nd subs, first Polaris-firing ones (*R*)....Feb. 28
AEC seeks tanker BWR, 2nd core for *Savannah* (*R*)....Mar. 28
Bethlehem Steel to build destroyer prototype (*R*)....Aug. 21
Bethlehem Steel to build first destroyer (*R*)....Nov. 28
Cannon fails to sink *Enterprise*, kills sister (*R*)..Mar. 25
D1G being built in S1G sphere; Ebasco AE (*R*)..July 25
First A1W critical (*R*)....Nov. 28
First reactor vessel shipped (photo) (*R*)..Mar. 25
Funds voted for six more FBM subs (*R*)..Aug. 21
General Dynamics gets gas-cooled project (*R*)..Feb. 24
Holifield calls for sharply increased sub program and underwater satellite (*R*)....Feb. 24
House passes construction bill for Icebreaker, U. S. project (*R*)....July 28
Long Beach keel is laid (*R*)....Jan. 22
Maritime Administration gives AGN research study on undersea cargo ship (*R*)....May 27
Maritime Administration orders Westinghouse simulator to train *Savannah* crew (*R*)..May 27
Maritime Administration plans big A-ship program with AEC (*R*)....June 20
Morse outlines plans for construction in FY61 (*R*)....Nov. 27
Navy rushes Polaris subs, seeks destroyer. 5 more subs (*R*)....Mar. 23
Nuclear Ship Cooperative Program drafted by AEC, MA (*R*)....June 20
N. S. *Savannah* keel laid (*R*)....June 21
President vetoes bill for budgetary reasons (*R*)..Sept. 156
Progress reports on FBM, attack, HK, subs; *Seawolf*; D1G (*R*)....May 19
Selection of States Marine challenged by Bonner (*R*)....Oct. 31
7 lines indicate interest; Westinghouse to build simulator to train her crew; GE to develop improved core (*R*)....May 27
Ship propulsion (Geneva—1958)....Sept. 92
Skate sets endurance record (*R*)....June 21
Skate sets record to England (*R*)....Mar. 23
Shipjack launched (photos) (*R*)....June 20
States Marine Lines chosen operating agent of *Savannah* (*R*)....Aug. 21
T-5 tanker plan dead; MRB plans larger A-tanker (*R*)....Aug. 21
Triton launched August 19 (*R*)....Sept 157
U. S. shippers invited to operate (*R*)....Apr. 27
Westinghouse given contract for new *Seawolf* reactor (*R*)....Mar. 25

Nuclear Reactors, Propulsion, Rockets
And now, outer space (*Edit*)....Mar. 61
Basic principles. J. Grey....July 62
Beyond tomorrow....July 73
Democrats call for Rover speedup; JCAE creates Space Propulsion Committee (*R*)..Feb. 24
Democrats seek outer space policy control for AEC; projects described; how nuclear rockets might work (*R*)....Mar. 20
Disclosures on rocket advances: 3 SNAP approaches (*R*)....Aug. 25
Kiwi-A completed at Jackass Flatts by ACF (*R*)....July 25
Los Alamos' Project Rover. R. Schreiber..July 70
NASA takes over Rover (*R*)....Nov. 24
Nuclear-rocket timetable....July 69
Rocket-reactor design. M. Levoy, J. Newgard....July 66

Nuclear Reactors, Research & Training
ANL expects to complete treat this year; fuel order let (*R*)....July 25
Bigger and better swimming-pool reactors. P. Garay (*NE*)....June 99
Gamma-dose enhancement from neutron capture in Cd. D. Kline, F. Remick (*CS*)..Mar. 97
KEWB undergoes record transient (*R*)....July 25
LPTR goes critical; description (*R*)....Jan. 26
MITR goes critical (*R*)....Aug. 25

NUCLEONICS reactor file No. 6—reactors on the line; ORR ..... Aug. facing 120
ORR goes critical (*R*) ..... Apr. 25
Pulsed research reactor (Geneva—1958) . Sept. 81
U. S. exhibits reactor with unique fuel-moderator (*NE*) ..... Aug. 116
SERF, Sandia research reactor, nearing construction (*R*) ..... Nov. 25
Vitro offers VITCOR low-power reactor (*R*) .. Oct. 29

Nuclear Reactors, Test
Aircraft shield test reactor. J. Nance, L. Perry ..... Jan. 58
Criteria for test reactors. B. Wolfe ..... Nov. 135
ETR full power due pin-assembled elements, B&W says (*R*) ..... Nov. 25
ETR now operating at full design power (*R*) . May 26
ETR tests improve outlook for solution of fuel problems (*R*) ..... Jan. 23
GETR approved by ACRS (*R*) ..... Sept. 155
GETR rising swiftly, dome completed (photo) (*R*) ..... July 27
Industrial Testing Reactors, Inc., forms to build privately owned test unit; description (*R*) ..... May 26
MTR critical on Pu core (*R*) ..... Sept. 157
MTR tries out 20 %-enriched U (*NEN*) . Aug. 114
Pricing test-reactor space. R. Murray, M. Schultz (*NE*) ..... Dec. 76
The engineering test reactor—a status report. R. Doan (*NE*) ..... Jan. 102
WTR core tested critically; CRX operating (*R*) July 25

"Nucleonics" (Magazine) (See also *Data sheets; Editorials;* and *Foldouts*)
Acceleration subsidy backed in NU survey (*R*) Feb. 17
Surveys opinion on U. S. reactor policies (*R*) . Jan. 23

O

Oak Ridge National Laboratory
AEC reveals principles of Stellarator, Pyrotron and DCX (*TH*) ..... May 122
Multicurie Fission Products Pilot Plant on stream in August (*R*) ..... Oct. 22
Oak Ridge Y-12 accidental excursion, June 16, 1958 ..... Nov. 138

P

Patents
AEC claimed no patent for public use, 202 hearings told (*R*) ..... Mar. 18
AEC sets public meeting on program (*R*) . Apr. 27
AEC staff opposes patent policy change (*R*) .. May 19
Patents and atomic energy. A. Puishes . Oct. 74
Phosphors (See *Instruments, detection, scintillation*)
Photomultipliers (See *Instruments, detection, scintillation*)
Physics (See also *Reactor physics*)
Effective-energy method for spent-fuel shielding. R. Ashley ..... Oct. 78
Electrical analog solves reactor design problems. S. Nagao (*NE*) ..... Jan. 88
How channeling between chunks raises neutron transmission through boral. W. Burrus (*NE*) ..... Jan. 91
No charge separation found in neutrons (*TA*) . July 110
Nuclides tabulated by half-lives (*AR*) .... July 106
Critical-assembly booby traps. H. Paxton ... Mar. 80
Piles (See *Nuclear reactors*)
Plowshare Project
AEC tackling difficult problem; Rainier shot; industry reaction (*R*) ..... Apr. 21
First excavation use: harbor in NE Alaska (*R*) July 27
Second test shot planned by AEC bigger (*R*). Sept. 156
$3-million approved by Congress (*R*) .... Aug. 17
Plutonium
AEC, JCAE agree on new Pu buyback price from '63 (*R*) ..... Sept. 152
AEC raises export maximum from 10 to 200 gm (*R*) ..... Sept. 154
Compromise solution on Pu buyback seen (*R*) May 20
French production off, at Marcoule (*R*) . Aug. 19
Joint Chiefs ask more; Anderson sees "bail-out" (*R*) ..... June 22
MTR critical on Pu core (*R*) ..... Sept. 157
NBS to provide Pu standard (*R*) ..... Nov. 27
Nuclear-track technique for low-level Pu in urine. L. Schwendiman, J. Healy (*CS*) .... June 78
Plutonium ..... Aug. 96
Plutonium recycle test reactor. R. Fryar . Jan. 62
Pu fast reactor performance (Geneva—1958) . Sept. 96
Poisoning (See *Fission products; Fuel cycles;* and *Reactor physics*)
Poland
First reactor goes critical (*R*) ..... July 28
Poland signs agreement with Russia on further reactor aid (*R*) ..... Mar. 27
Poland will launch first A-ship in 1970 (*R*) . Feb. 25
U-reserves 300 % greater than believed (*R*) ... Mar. 27
Processing (See *Chemical reprocessing of fuels;* and *Radiation processing*)
Proportional Counters (See *Instruments, detection, G-M & proportional*)

R

Radiation Applications (See also *Accelerators; Activation analysis; Irradiation facilities and techniques; Isotopes; Isotopes, labeled compounds; Radiation effects; Radiation processing; Radiochemistry; Radiography;* and *Tracers*)
AEC off on big program to speed radiation use (*R*) ..... Oct. 21
AI gets study contract on using CPPD by production radiation (*R*) ..... Aug. 25
CEM group doing high-level applications study (*R*) ..... July 27
Cloud chamber finds dewpoints of gases (*AR*) . May 121
Ethicon inaugurates radiation sterilization of sutures plant (*R*) ..... Feb. 27
Hanford to build radiochem building for fission products (*R*) ..... Oct. 23
Ionization chamber sniffs for smoke (*AR*) . Nov. 186
Multicurie fission products plant at ORNL on stream in August (*R*) ..... Oct. 22
Putting safety into gaging-source designs. G. Foster (*AR*) ..... Feb. 128
Radiation applications in New York industry. A. Abrahams (*AR*) ..... Feb. 131
Using nuclear methods in oil-well logging. R. Caldwell ..... Dec. 58
Wear studies in SITU (*AR*) ..... June 102
X-ray microanalysis uses electron probe (*AR*) . Nov. 184
Radiation Effects (See also *Medical physics and research; Radiation applications; and Radiochemistry*)
Applied radiation (Geneva—1958) ..... Sept. 86
Battelle to catalog radiation effects (*AR*) . May 121
Graft copolymers—a new technology? D. Metz ..... Apr. 73
Irradiation study technique (*TB*) ..... July 98
Nondestructive test for radiation effects. J. Matlack, S. Strella (*AR*) ..... June 103
Polymer degradation—wide-range dosimeter. P. Feng (*AR*) ..... Oct. 114
Radiation decreases beetle reproduction (*AR*) . Nov. 184
Radiation effects in magnetic materials. D. Gordon, *et al.* ..... June 73
Radiation effects in quarts—a bibliography. R. Bechmann (*AR*) ..... Mar. 122
Radiation-resistant motors for nuclear aircraft controls. R. Fries (*NE*) ..... July 103
Sewage irradiation—is it economical? (*AR*) ... July 106
Radiation Measurements (See *Dosimetry; Instruments;* and *Measurements*)
Radiation Processing (See also *Radiation applications*)
AEC moving ahead on HI-FI negotiations (*R*) July 27
Applied radiation (Geneva—1958) ..... Sept. 86
Gamma-irradiation facilities in the United States. R. Ellis, Jr. (*AR*) ..... July 108
Graft copolymers—a new technology? D. Metz ..... Apr. 73
Radiation decreases beetle reproduction (*AR*) . Nov. 184
Radiation processing of foods in Britain. B. Coleby, *et al.* (*AR*) ..... Nov. 188
Sewage irradiation—is it economical? (*AR*) ... July 106
Sewage treatment—another suggestion (*AR*) .. Oct. 116
Socony Mobil asks bids on radiation lab with unique hot cell (*R*) ..... Feb. 28
Texas Co. opens radiation research lab (*R*) . Oct. 31
Texas University studying crude oil irradiation (*R*) ..... May 27
2-megacurie facility, HI-FI, for Sharpe in place of FIR; Savannah River enters food program (*R*) ..... May 27
Radiochemistry (See also *Radiation applications; Radiation effects;* and *Radiation processing*)
Radiography (See also *Autoradiography*)
Preparation of xenon-133 radiography sources from spent fuel. E. Wilson, *et al.* (*AR*) . Apr. 110
Radioisotopes (See *Isotopes*)
Rare Earths
Control rod materials. D. Dunning, W. Ray. May 88
Raw Materials (See also *Uranium* and *Thorium*)
Isotope dilution, α-spectrometer for U and Th determination. L. Howard (*CS*) ..... Feb. 112
Reactivity Effects (See *Reactor physics*)
Reactor Physics
A simplified P_3 approximation method for calculating thermal utilization. E. Page, R. Murray (*NE*) ..... Mar. 114
Boiling-water-reactor instability. J. Thie (*NE*) ..... Mar. 102
Burnable poison concept (Geneva—1958) .... Sept. 94
Critical facilities for basic physics. H. Paxton Dec. 42
Cross sections (Geneva—1958) ..... Sept. 107
Easy computation of adjoint fluxes. B. Wolfe (*NE*) ..... Mar. 121
Effective cross sections for thermal spectra. C. Westcott (*NE*) ..... Oct. 108
Flux flattening improves output. M. Duret, W. Henderson (*NE*) ..... Nov. 168
Fuel cycles (Geneva—1958) ..... Sept. 104
Hazards evaluation of the Yankee reactor (*NE*) Mar. 112
Improving Xe poison prediction (*NEN*) .. Oct. 104
Mark-III makes EBR-I stable (Geneva—1958) . Sept. 97
Measuring reactor spectra with thresholds and resonances. J. Trice ..... July 81
New capture gamma ray measurements (*NEN*) Jan. 85
Predicting reactivity at high burnup. B. Wolfe (*NE*) ..... Mar. 116
Pu fast reactor performance (Geneva—1958) . Sept. 96
Reactor kinetic functions: a new evaluation. G. Keepin, T. Wimett ..... Oct. 86
Reactor spectra by pulse method (*TA*) .. June 106
Thermal-neutron data for the elements. M. Davis, D. Hauser .. Mar. 87; (*corr.*) Datum correction. S. Menkes (*LE*) ..... Oct. 120
Upping EBWR's power. J. DeShong, Jr. June 68
Void-induced power distortion in boiling-water reactors. J. Weil (*NE*) ..... June 90
Water-channel peaking factors. R. Deutsch (*NE*) ..... June 95
Xenon-poisoning computer. J. Paul, J. Cox (*CS*) ..... May 97
Xenon spatial oscillations. D. Randall, D. St. John ..... Mar. 82
Reactor Roundtable (See *Nuclear reactors, concepts*)
Reactors (See *Nuclear reactors*)
Reflectors, Reactor (See *Moderators, reactor;* and *Nuclear reactors, materials*)
Remote Controls and Handling Apparatus (See also *Components, reactor;* and *Control systems, reactor*)
Improved master-slave manipulator hand. W. Leith (*IM*) ..... Dec. 70
Reprocessing (See *Fuel reprocessing*)
Research Reactors (See *Nuclear reactors, research*)
Rickover, Hyman G.
Rickover speaks of Shippingport ..... Apr. 54
Rockets, Nuclear-Powered (See *Nuclear reactors, propulsion, rockets*)
Russia (See *USSR*)

S

Safety (See also *Health physics* and *Nuclear reactors, operation*)
AEC, U. S. Geological Survey in radiological survey of sites (*R*) ..... Nov. 27
Both Windscale reactors doomed; required safety measures (*R*) ..... Aug. 26
Designing for blast protection. F. Porzel .... Oct. 82
EBWR turbine activity very low despite bad fuel sample (*R*) ..... June 25
Hazards evaluation of the Yankee reactor (*NE*) Mar. 112
Inadvertent criticality at ORNL Y-12; 8 hurt (*R*) ..... July 22
Japanese, British disagree on earthquake problem (*R*) ..... June 26
Lockheed to do earthquake effects study (*R*) .. Feb. 26
NYC rules X-rays etc. must be registered (*R*) .. Oct. 31
Oak Ridge Y-12 accidental excursion, June 16, 1958 ..... Nov. 138
Putting safety into gaging-source designs. G. Foster (*AR*) ..... Feb. 128
Reactor control philosophies. M. Schultz .... May 62
Reactor exclusion areas—can they be eliminated? G. Tait ..... Jan. 71
Safeguards committee criticizes NACA reactor site (*R*) ..... Jan. 20
Safety control asked by Industrial Accident Boards (*R*) ..... Oct. 31
Safety of magnesium canning for CO_2-cooled reactors. M. Salesse (*NE*) ..... Feb. 123
Scintillation-counter analysis of EBWR radioactivity. S. Goslovich, *et al.* (*CS*) ..... May 94
Six hurt in Yugoslav reactor accident (*R*) .. Nov. 28
Special safety devices. N. Huston, N. Miller May 86
Scintillators (See *Instruments, detection, scintillation*)
Scintillation Counters (See *Instruments, detection, scintillation*)
Shielding
Attenuation of γ-rays from an infinite plane. M. Chasanov, M. Shatzkes .. June 63; (*corr.*) Attenuation misinterpreted. M. Chasanov, M. Shatzkes (*LE*) ..... Oct. 121
Boron steel for control rods and thermal shields. N. Balai (*NE*) ..... Jan. 100
Effective-energy method for spent-fuel shielding. R. Ashley ..... Oct. 78
Gamma-ray attenuation with buildup in water. D. Chappell ..... July 80
How channeling between chunks raises neutron transmission through boral. W. Burrus (*NE*) ..... Jan. 91
Shielding-glass buildup factors. J. Lindner ... Oct. 77
Shielding the Enrico Fermi fast breeder reactor. H. Hungerford, R. Mantey .... Nov. 120
Ships, Nuclear-powered (See *Nuclear reactors, propulsion, marine*)
Sodium
Advanced sodium design from U. S. (Geneva—1958 ..... Sept. 82
Sources, Radioactive (See *Irradiation facilities and techniques;* and *Isotopes, radioactive*)

Key to abbreviations: (*R*) = Roundup; (*Edit*) = an Editorial; (*CS*) = Cross Sections; (*NE*) = Nuclear Engineering; (*LE*) = Letters to the Editor; (*TA*) = Technical Advances; (*AR*) = Applied Radiation; (*NEN*) = Nuclear Engineering Notes; (*RR*) = Reactor Roundtable; (*TH*) = Thermonucleonics; (*IM*) = Instrumentation and Measurements.

Spain
First Spanish reactor, Moncloa pool, critical (*R*)....Nov. 26
Spain asks AI for 3-way reactor design: power, isotopes, testing (*R*)....Oct. 29
Spain showing desire to join Euratom; joins World Bank (*R*)....Oct. 30
Sweden
Agreement on R4 signed for construction; site (*R*)....Mar. 26
Heat reactor prospects abroad....Feb. 70
Smaller countries show interest in fusion (Geneva—1958)....Sept. 71
Vasteras reactor canceled, consolidated with Farsta (*R*)....Oct. 30
World nuclear programs (Geneva—1958)....Sept. 62
Switzerland
Reactor AG to be nationalized; ETH to operate Wurenlingen (*R*)....Aug. 26
Smaller countries show interest in fusion (Geneva—1958)....Sept. 71
Switzerland government grants funds for nuclear work; lab projected (*R*)....Feb. 25

T

Test Facilities (See also *Irradiation facilities and techniques;* and *Nuclear reactors test*)
Test loop for determining burnout heat flux. W. Milich, E. King (*NE*)....Apr. 108
Thailand
Thailand to buy U. S. research reactor (*R*)....July 26
The Netherlands (See *Netherlands*)
Thermodynamics of Nuclear Plants
Eight reactor types—a thermodynamic comparison. S. Baron...June 64; *also* Design makes the difference. L. Prem (*LE*)...Aug. 146; (*reply*) S. Baron....Aug. 146
Steam cycles for advanced gas-cooled reactors Geneva—1958....Sept. 81
Thermal design criteria for pressurized-water reactors. W. Jacobi, *et al.*....Nov. 130
Thermodynamics of gas-cooled reactors. G. Melese...Feb. 72; (*also*) YBWR = $2,500,000 +. J. Maider (*LE*)....June 109
Void-induced power distortion in boiling-water reactors. J. Weil (*NE*)....June 90
Water-channel peaking factors. R. Deutsch (*NE*)....June 95
Thermonuclear Power
AEC reveals principles of Stellarator, Pyrotron and DCX (*TH*)....May 122
Beyond tomorrow....July 73
C-Stellarator construction contract to Malan (*R*)....Apr. 27
Declassified; revelations at Geneva (*R*)...Sept. 18
Euratom plans research (*R*)....Nov. 18
Exhibits for Geneva awaited (*R*)....May 21
Expansion being considered, 202 hearings told (*R*)....Mar. 18
Fusion (Geneva—1958)....Sept. 66
Microwaves aid fusion research (*TH*)....July 111
New capacitor bank speeds shock research (*TH*)....Apr. 116
No thermonuclear neutrons in Zeta (*R*)...June 19
RCA, Allis-Chalmers form C-Stellarator Associates (*R*)....Feb. 27
Reduced secrecy for fusion work? (*TH*)...Jan. 84
Russians concentrate on the pinch, too (Geneva—1958)....Sept. 70
Smaller countries show interest in fusion (Geneva—1958)....Sept. 71
Stellarator program blooms at Princeton (*TH*) Nov. 198
U. K. steadfastly pursues the pinch (Geneva—1958)....Sept. 70
United States and Britain reveal fusion advances....Feb. 90
Thickness Gages (See *Gages, radioactive;* and *Radiation applications*)
Thorium
Canada starting first plant (*R*)....Aug. 26
Davison starts production at Erwin (*R*)...Apr. 27
Isotope dilution, α-spectrometer for U and Th determination. L. Howard (*CS*)....Feb. 112
NBS to provide Th standard (*R*)....Nov. 27
Thorium. B. Manowitz....Aug. 91
Tracers (See also *Isotopes* and *Radiation applications*)
Applied radiation (Geneva—1958)....Sept. 86
BuMines working on tracers in metallurgy (*R*) June 27
Co^{60} label proves auto wax quality (*AR*)...May 121
Mock iodine for I^{131} calibrations (*AR*)....Aug. 134
Radiotracers control remote booster pumps (*AR*)....Oct. 117
Single-channel counter for carbon-14 and tritium. T. Hodgson, *et al.* (*CS*)....July 89
Tritium tracing—a rediscovery....Mar. 62

U

United Kingdom (See *Britain*)
United Nations
AEC, industry strain to meet exhibit deadlines (*R*)....July 23
Coverage (*R*)....Sept. 17
Geneva—1958....Sept. 61
Over 1,300 papers submitted to AEC (*R*)....Feb. 28
Papers pouring in, 36 nations submit 1925; fusion exhibits, review papers are innovations; staff (*R*)....May 21
75 fusion papers filed; 1,550 abstracts in (*R*)....Apr. 28
United States
NUCLEONICS survey of operating critical facilities in the U. S....Dec. 44
United States fuel development (Geneva—1958)....Sept. 98
World nuclear programs (Geneva—1958)....Sept. 62
Uranium (See also *Raw materials, Fuels* and *Fuel cycles*)
AEC boosts U-buying, may authorize export (*R*)....May 24
AEC liberalizes nonreactor use of U (*R*)...July 22
AEC U statistics on first-half '58 production out (*R*)....Oct. 28
Finland plans exports, has big resources (*R*)...Mar. 27
Fission-product yields from U, Th and Pu. S. Katcoff...Apr. 78; (*corr.*) Fission confusion. S. Katcoff (*LE*)....July 115
Glum industry studies AEC leveling-off order (*R*)....Jan. 23
Gore sets inquiry on uranium ore procurement (*R*)....Feb. 24
Isotope dilution, α-spectrometer for U and Th determination. L. Howard (*CS*)....Feb. 112
NBS completes 10 of 15 U-isotope standards (*R*) Nov. 27
New approach to electrolytic U. L. Niedrach, *et al.*....Jan. 64
1957 production, reserves figures out; breakdown (*R*)....Apr. 27
Oxide on catcher foils spoils power measurements. J. Renaker, *et al.* (*NE*)....Feb. 127
Permissible weight concentrations for enriched uranium. C. Pelletier (*NE*)....Oct. 111
Polish U-reserves up 300 % (*R*)....Mar. 27
Pricing enriched uranium. H. Hollister, A. Burington....Jan. 54
South African exports still rising (*R*)....Mar. 26
The case for enriched uranium. C. Starr....Aug. 86
The case for natural uranium. J. Menke....Aug. 88
U-Institute hits AEC on procurement policies (*R*)....June 21
Uranium alloys and dispersions. R. Noland, *et al.*....Aug. 89
Uranium oxide experience. J. Danko...Aug. 90
U^{235} specifications declassified (*R*)....Feb. 27
USSR
Civilian A-sub roles seen (*R*)....Mar. 27
Kazakh nuclear research center building (*R*)...Mar. 27
Lenin at fitting-out basin; reactors installed (*R*) Nov. 24
Radioisotopes in Russia. H. Gomberg (*AR*). Aug. 136
Russian Geneva disclosures, assessments (*R*)...Sept. 19
Russians concentrate on the pinch, too (Geneva—1958)....Sept. 70
Table of Russian reactors (*R*)....Sept. 26
U. S. S. R. seen working on A-locomotive for 1960's (*R*)....Nov. 26
U. S. S. R. will help Hungary build experimental power reactor (*R*)....June 26

V

Venezuela
Venezuela working out bilateral with U. S. (*R*) Nov. 26

W

Waste Disposal
California ends dispute with firms; several cleared (*R*)....Oct. 31
California Fish & Game officials withdraw hearing request, re waste (*R*)....June 27
Fluor gets $3-million more for calcination plant (*R*)....Nov. 27
Fluor to build pilot waste calcination plant at NRTS (*R*)....Aug. 27
Fuel reprocessing series 3—treatment and disposal of fuel-reprocessing waste. J. Lieberman....Feb. 82
GE sees clue to solution with sodium silicate gel (*R*)....Feb. 27
High-purity evaporation for waste concentration. T. Carnavos, J. Hagen (*NE*)...Feb. 125
Isotopes Specialties gets AEC ok for ocean disposal; others in field (*R*)....Apr. 27
Portland, Conn., protests waste disposal license (*R*)....Nov. 27
Tracerlab gets license on waste decontamination (*R*)....June 27
Wear Tests (See *Radiation applications*)
Well Logging (See *Radiation applications;* and *Instruments, detection*)
West Germany (See *Germany, West*)

X

X-rays
X-ray microanalysis uses electron probe (*AR*). Nov. 184

Y

Yugoslavia
Six hurt in radiation accident (*R*)....Nov. 28

Z

Zirconium
Carborundum slashes Zr price (*R*)....Jan. 27
Columbia-National to export reactor-grade (*R*) Aug. 27
Mallory-Sharon cuts prices (*R*)....Oct. 29
NH_4F—versatile reagent for zirconium fuels. A. McCord, D. Spink (*CS*)....Feb. 94
Zircaloy vs stainless: how designers feel (*NEN*) June 89
Zr vs. stainless steel costs studied (*R*)....Feb. 24

AUTHOR INDEX

A

Abrahams, Albert P. Radiation applications in New York industry (*AR*)....Feb. 131
Ackerman, M. E., T. Hodgson, B. Gordon. Single-channel counter for carbon-14 and tritium (*CS*)....July 89
Alves, R. V., E. Tochilin. Neutron spectra from mock-fission sources (*IM*)....Nov. 145
Anderson, Ernest C., F. Hayes, R. Hiebert. Geneva human counter....Aug. 106
Artandi, Charles, A. Stonehill. Polyvinyl chloride—new high-level dosimeter (*AR*)... May 118
Ashley, Ramon L. Effective-energy method for spent-fuel shielding....Oct. 78

B

Baker, Wilfred F., J. Bohannon, Jr. Simulating nuclear blast effects....Mar. 74
Balai, Nicholas. Boron steel for control rods and thermal shields (*NE*)....Jan. 100
Baron, S. Design makes the difference (*LE*). Aug. 146
Baron, S. Eight reactor types—a thermodynamic comparison....June 64
Baron, S. Reactor roundtable—gaseous-fuel reactor (*NE*)....Aug. 128
Barton, William R. Materials witnesses (*LE*). May 129
Bechmann, R. Radiation effects in quarts—a bibliography (*AR*)....Mar. 122
Beck, Clifford K. Hazards evaluation of the Yankee reactor (*NE*)....Mar. 112
Beeley, R. J. First details of A.I.'s epithermal Th breeder (*NE*)....Nov. 162
Bennett, R. D. The West is still golden (*LE*) Feb. 150
Bermanis, H. L., J. Renaker, V. Stratton. Oxide on catcher foils spoils power measurements (*NE*)....Feb. 127
Bisbee, F. A., E. Kempner. Simple, inexpensive, automatic sample changer and recorder (*CS*)....June 87
Bistline, J. A., C. Hofmann. High-temperature critical facility....Dec. 46
Bohannon, James R., Jr., W. Baker. Simulating nuclear blasts effects....Mar. 74
Brennan, John E., D. Kallman. Blending versus reenrichment (*NE*)....July 101
Brookshier, William K. Silicon diodes improve reactor period meters (*CS*)....Aug. 108
Brown, B., E. Hooper, Jr. Plastic phosphor matrix for fast-neutron detection (*CS*). Apr. 96
Brownell, G. L., W. Ellett, H. LeVine. Measuring γ-ray spectra with large plastic scintillators (*IM*)....Dec. 68
Burington, Artha Jean, H. Hollister. Pricing enriched uranium....Jan. 54
Burrus, Walter R. How channeling between chunks raises neutron transmission through boral (*NE*)....Jan. 91

C

Caldwell, Richard L. Using nuclear methods in oil-well logging....Dec. 58
Carnavos, T. C., J. Hagen. High-purity evaporator for waste concentration (*NE*)...Feb. 125
Chappell, David G. Data sheet No. 26—gamma-ray attenuation with buildup...July 80
Chasanov, M. G., M. Shatzkes. Attenuation of γ-rays from an infinite plane....June 63
Chasanov, M. G., M. Shatzkes. Attenuation misinterpreted (*LE*)....Oct. 121
Chase, Robert L. Shaping pulses for nuclear spectrometry....Nov. 116
Chastain, J. W., F. Jankowski. Planning . . . and operating a critical facility....Dec. 48

Clark, F. H., C. Klahr. Temperature-zoned reactor (*RR*) ..... May 114
Cohen, I., E. Losco, J. Eichenberg. Ag-In-Cd could replace Hf for PWR control rods (*NE*) ..... Aug. 122
Cohen, Karl. Charting a course for nuclear power development ..... Jan. 66
Coleby, B., T. Horne, M. Ingram, S. Jefferson. Radiation processing of foods in Britain (*AR*) ..... Nov. 188
Cormack, D. V., E. Rawson. A matrix to correct for scintillator escape effects (*IM*) ..... Oct. 92
Cox, J. R. G., J. Paul. Xenon-poisoning computer (*CS*) ..... May 97
Culler, F. L. Illustration credits (*LE*) ... Mar. 128

D

Dahlberg, R. C., T. Evans. Spiral fuel element for gas-cooled reactors (*NE*) ..... Apr. 106
Dalzell, R. Carson, W. Davis, C. Goodman, U. Staebler. AEC's fuel program ..... Aug. 78
Danko, J. C. Uranium oxide experience ..... Aug. 90
Davis, M. V., D. Hauser. Thermal-neutron data for the elements ..... Mar. 87
Davis, W. Kenneth, C. Goodman, U. Staebler, R. Dalzell. AEC's fuel program ..... Aug. 78
Dearing, B. E., A. Schafer, L. Niedrach. New approach to electrolytic U ..... Jan. 64
deBoisblanc, D. R., J. Thompson, K. McCollom. Sensitive measurement of pulse-amplifier gain (*CS*) ..... Jan. 74
DeShong, James A., Jr. Upping EBWR's power ..... June 68
Deutsch, R. W. Water-channel peaking factors (*NE*) ..... June 95
Dibbs, H. P., S. Richards, J. Eakins, E. Wilson. Preparation of xenon-133 radiography sources from spent fuel (*AR*) ..... Apr. 110
Doan, R. L. The engineering test reactor—a status report (*NE*) ..... Jan. 102
Downs, John W., F. Smith. Organic-glass scintillators (*CS*) ..... Mar. 94
Dunham, R. J., C. Pfister. Calibration aberration (*LE*) ..... Mar. 128
Dunning, D. N., W. Ray. Control rod materials ..... May 88
Duret, M. F., W. Henderson. Flux flattening improves reactor output (*NE*) ..... Nov. 168

E

Eakins, J. D., E. Wilson, H. Dibbs, S. Richards. Preparation of xenon-133 radiography sources from spent fuel (*AR*) ... Apr. 110
Edlund, M. C., G. Rhode. Spectral shift control ..... May 80
Eichenberg, J. D., I. Cohen, E. Losco. Ag-In-Cd could replace Hf for PWR control rods (*NE*) ..... Aug. 122
Ellett, W. H., H. LeVine, G. Brownell. Measuring γ-ray spectra with large plastic scintillators (*IM*) ..... Dec. 68
Ellis, R. Hobart, Jr. Gamma-irradiation facilities in the United States—a NUCLEONICS survey (*AR*) ..... July 108
Evans, T. C., R. Dahlberg. Spiral fuel element for gas-cooled reactors (*NE*) ..... Apr. 106

F

Farmelo, Donald R., G. Smith. Radionuclides arranged by gamma-ray energy .. Feb. 80
Feng, Paul Y. Polymer degradation—wide-range dosimeter (*AR*) ..... Oct. 114
Fischell, R. E., D. Gordon, R. Sery. Radiation effects in magnetic materials ..... June 73
Fish, H. R., S. Goslovich, J. Pingel. Scintillation-counter analysis of EBWR radioactivity (*CS*) ..... May 94
Foster, George B. Putting safety into gaging-source designs (*AR*) ..... Feb. 128
Fries, R. C. Radiation-resistant motors for nuclear aircraft controls (*NE*) ..... July 103
Fryar, R. M. Plutonium recycle test reactor. ..... Jan. 62

G

Garay, Paul N. Bigger and better swimming-pool reactors (*NE*) ..... June 99
Gomberg, Henry J. Radioisotopes in Russia (*AR*) ..... Aug. 136
Goodman, Clark, U. Staebler, R. Dalzell, W. Davis. AEC's fuel program ..... Aug. 78
Goslovich, S. J., J. Pingel, H. Fish. Scintillation-counter analysis of EBWR radioactivity (*CS*) ..... May 94
Gordon, B. E., M. Ackerman, T. Hodgson. Single-channel counter for carbon-14 and tritium (*CS*) ..... July 89
Gordon, D. I., R. Sery, R. Fischell. Radiation effects in magnetic materials ..... June 73
Grant, P. J. Gas-cooled reactor for the South of Scotland Electricity Board (*NE*) .... May 108
Green, B. C., J. Spinks. A free-moving isodose-tracing machine (*CS*) ..... Apr. 92
Grey, Jerry. Basic principles ..... July 62

H

Hagen, J. W., T. Carnavos. High-purity evaporator for waste concentration (*NE*) ... Feb. 125
Halfhill, D. W. Magnetic tape simplifies handling of nuclear data ..... Dec. 55
Harrer, J. M., W. Kann. Control rod drives. May 84
Hauser, D. T., M. Davis. Thermal-neutron data for the elements ..... Mar. 87
Hayes, F. Newton, R. Hiebert, E. Anderson. Geneva human counter ..... Aug. 106
Healy, J. W., L. Schwendiman. Nuclear-track technique for low-level Pu in urine (*CS*) .... June 78
Henderson, W. J., M. Duret. Flux flattening improves reactor output (*NE*) ..... Nov. 168
Hiebert, Richard D., E. Anderson, F. Hayes. Geneva human counter ..... Aug. 106
Hodgson, T. S., B. Gordon, M. Ackerman. Single-channel counter for carbon-14 and tritium (*CS*) ..... July 89
Hofmann, C. S., J. Bistline. High temperature critical facility ..... Dec. 46
Hollister, Hal L., A. Burington. Pricing enriched uranium ..... Jan. 54
Hooper, E. B., Jr., B. Brown. Plastic phosphor matrix for fast-neutron detection (*CS*) .. Apr. 96
Horne, T., M. Ingram, S. Jefferson, B. Coleby. Radiation processing of foods in Britain (*AR*) Nov. 188
Howard, L. E. Isotope dilution, α-spectrometer for U and Th determination (*CS*) .. Feb. 112
Hungerford, H. E., R. Mantey. Shielding the Enrico Fermi fast-breeder reactor ..... Nov. 120
Huston, N. E., N. Miller. Special safety devices ..... May 86

I

Ingram, M., S. Jefferson, B. Coleby, T. Horne. Radiation processing of foods in Britain (*AR*) Nov. 188

J

Jacobi, W. M., J. Roarty, N. Sher, K. Treadwell, J. Zerbe. Thermal design criteria for pressurized-water reactors ..... Nov. 130
Jankowski, F. J., J. Chastain. Planning ... and operating a critical facility ..... Dec. 48
Jenkins, G., L. Preuss. Pinhole camera maps beta-active deposits (*IM*) ..... Oct. 98
Jensen, Gert, K. Wilsky, P. Jensen, F. Thomsen. Slow, simple 99-channel pulse-height analyzer (*IM*) ..... Oct. 100
Jensen, Preben Holmgreen, F. Thomsen, G. Jensen, K. Wilsky. Slow, simple 99-channel pulse-height analyzer (*IM*) ..... Oct. 100
Judkins, Malcolm F. What price reactor materials? (*NE*) ..... Jan. 96

K

Kallman, Donald, J. Brennan. Blending versus reenrichment (*NE*) ..... July 101
Kann, W. J., J. Harrer. Control rod drives.. May 84
Katcoff, Seymour. Fission confusion (*LE*) ... July 115
Katcoff, Seymour. Fission-product yields from U, Th and Pu ..... Apr. 78
Kaufmann, J. F., D. Stewart, Jr. AEC's industrial-heat program ..... Feb. 65
Kaufmann, Stefan G., L. Pahis. Neutron detectors for operation at 400° C (*CS*) Mar. 90
Keepin, G. R., T. Wimett. Reactor kinetic functions: a new evaluation ..... Oct. 86
Kempner, E. S., F. Bisbee. Simple, inexpensive, automatic sample changer and recorder (*CS*) ..... June 87
Kendall, G. L., R. Willardson, J. Moody. Photovoltaic gamma-ray dosimeter (*IM*) .. Oct. 101
Kereiakes, James G., G. Kraft, O. Weir, A. Krebs. Beta-excited X-ray sources for scintillation-spectrometry (*CS*) ..... Jan. 80
King, E. C., W. Milich. Test loop for determining burnout heat flux (*NE*) ..... Apr. 108
Kittel, J. H., R. Noland, J. Schumar. Uranium alloys and dispersions ..... Aug. 89
Klahr, C. N., F. Clark. Temperature-zoned reactor (*RR*) ..... May 114
Kline, D. E., F. Remick. Gamma-dose enhancement from neutron capture in Cd (*CS*) Mar. 97
Koch, L. J. Fast-breeder power reactors: where does U. S. program stand? ..... Mar. 68
Kocher, L. F. Energy discrimination in gamma-dose evaluation (*IM*) ..... Nov. 151
Kraft, G. R., O. Weir, A. Krebs, J. Kereiakes. Beta-excited X-ray sources for scintillation-spectrometry (*CS*) ..... Jan. 80
Kramish, Arnold. East-West open house (*LE*) June 109
Kratzer, Myron B. U. S. export policies .... Aug. 82
Krebs, A. T., J. Kereiakes, G. Kraft, O. Weir. Beta-excited X-ray sources for scintillation-spectrometry (*CS*) ..... Jan. 80

L

Laisk, E. Transistorized, portable spark counter (*CS*) ..... July 95
Lane, James A. Where we stand today .. Jan. 46
Lapsley, A. C. Neutron, gamma measurements for in-pile power monitoring (*CS*) .... Feb. 106
Leaders, W. M. How Mallinckrodt converts enriched UF_6 to UO_2 powder ..... Nov. 126
Leith, W. H. Improved master-slave manipulator hand (*IM*) ..... Dec. 70
LeVine, H. D., G. Brownell, W. Ellett. Measuring γ-ray spectra with large plastic scintillators (*IM*) ..... Dec. 68
Levoy, Myron M., J. Newgard. Rocket-reactor design ..... July 66
Lieberman, Joseph A. Fuel reprocessing series—3. Treatment and disposal of fuel-reprocessing waste ..... Feb. 82
Lindner, John W. Data sheet No. 27—shielding-glass buildup factors ..... Oct. 77
Linnert, Charles. Control-rod drive (*LE*) .... Oct. 120
Losco, E. F., J. Eichenberg, I. Cohen. Ag-In-Cd could replace Hf for PWR control rods (*NE*) ..... Aug. 122
Lukkason, Lester N. Material witnesses (*LE*) May 129

M

Mackay, C. F., R. Wolfgang. New proportional counters for gases and vapors .... Oct. 69
MacPhee, John. Today's control design .. May 66
Maider, J. E. VBWR = $2,500,000 + (*LE*) June 109
Mann, E. R. A look ahead to tomorrow in power reactor control ..... May 78
Manowitz, Bernard. Thorium ..... Aug. 91
Mantey, R. F., H. Hungerford. Shielding the Enrico Fermi fast-breeder reactor .... Nov. 120
Matlack, J. D., S. Strella. Nondestructive test for radiation effects (*AR*) ..... June 103
Mayer, Karl M. The market for heat reactors Feb. 66
McCollom, K. A., D. deBoisblanc, J. Thompson. Sensitive measurement of pulse-amplifier gain (*CS*) ..... Jan. 74
McCord, A. T., D. Spink. NH_4F—versatile reagent for zirconium fuels (*CS*) ..... Feb. 94
Melese, Gilbert B. Thermodynamics of gas-cooled reactors ..... Feb. 72
Menke, John R. The case for natural uranium ..... Aug. 88
Menkes, Sherwood B. Datum correction (*LE*) Oct. 120
Metz, Donald J. Graft copolymers—a new technology? ..... Apr. 73
Milich, W., E. King. Test loop for determining burnout heat flux (*NE*) ..... Apr. 108
Miller, N. C., N. Huston. Special safety devices ..... May 86
Moody, J. W., G. Kendall, R. Willardson. Photovoltaic gamma-ray dosimeter (*IM*) ... Oct. 101
Murray, Raymond L., E. Page. A simplified P_3 approximation method for calculating thermal utilization (*NE*) ..... Mar. 114
Murray, R. L., M. Schultz. Pricing test reactor space (*NE*) ..... Dec. 76

N

Nagao, Shigeo. Electrical analog solves reactor design problems (*NE*) ..... Jan. 88
Nance, J. C., L. Perry. Aircraft shield test reactor ..... Jan. 58
Neissel, John P. Keysort cards are convenient index to nuclear data (*IM*) ..... Nov. 142
Newgard, John J., M. Levoy. Rocket-reactor design ..... July 66
Niedrach, L. W., B. Dearing, A. Schafer. New approach to electrolytic U ..... Jan. 64
Noaks, John W. The APPR zero-power experiments ..... Dec. 51
Noland, R. A., J. Schumar, J. Kittel. Uranium alloys and dispersions ..... Aug. 89

P

Page, Earl M., R. Murray. A simplified P_3 approximation method for calculating thermal utilization (*NE*) ..... Mar. 114
Pahis, Leroy E., S. Kaufmann. Neutron detectors for operation at 400° C (*CS*) .. Mar. 90
Parnell, J., C. Sundin. A way to stabilize reactor instrument power supplies (*NE*) ... July 102
Paul, J. J., J. Cox. Xenon-poisoning computer (*CS*) ..... May 97
Paxton, Hugh C. Critical-assembly booby traps ..... Mar. 80
Paxton, Hugh C. The role of critical facilities—2. critical facilities for basic physics Dec. 42
Pelletier, Charles A. Permissible weight concentrations for enriched uranium (*NE*) .. Oct. 111
Perazich, George. Nuclear heat for paper mills? ..... Feb. 68
Perry, L. W., J. Nance. Aircraft shield test reactor ..... Jan. 58
Pfister, C. G., R. Dunham. Calibration aberration (*LE*) ..... Mar. 128
Pingel, J. H., H. Fish, S. Goslovich. Scintillation-counter analysis of EBWR radioactivity (*CS*) ..... May 94
Porzel, F. P. Designing for blast protection .. Oct. 82
Poss, F. J. Facts of life—steel department (*LE*) ..... Aug. 147
Prem, Lawrence. Design makes the difference (*LE*) ..... Aug. 146

Key to abbreviations: (*R*) = Roundup; (*Edit*) = an Editorial; (*CS*) = Cross Sections; (*NE*) = Nuclear Engineering; (*LE*) = Letters to the Editor; (*TA*) = Technical Advances; (*AR*) = Applied Radiation; (*NEN*) = Nuclear Engineering Notes; (*RR*) = Reactor Roundtable; (*TH*) = Thermonucleonics; (*IM*) = Instrumentation and Measurements.

Preuss, L. E., G. Jenkins. Pinhole camera maps beta-active deposits (*IM*).....Oct. 98
Puishes, Alfons. Patents and atomic energy Oct. 74

R

Randall, D., D. St. John. Xenon spatial oscillations.....Mar. 82
Rawson, E. G., D. Cormack. A matrix to correct for scintillator escape effects (*IM*)... Oct. 92
Ray, W. E., D. Dunning. Control rod materials.....May 88
Redman, W. C. The role of critical facilities—2. critical facilities for reactor design Dec. 40
Remick, F. J., D. Kline. Gamma-dose enhancement from neutron capture in Cd (*CS*) Mar. 96
Renaker, J. N., V. Stratton, H. Bermanis. Oxide on catcher foils spoils power measurements (*NE*).....Feb. 127
Reynolds, George T. What's new in counters?—scintillation track chambers.....June 60
Rhode, G. K., M. Edlund. Spectral shift control.....May 80
Rice, William L. R. Effects of gamma radiation on organic fluids and lubricants (*NE*) Oct. 112
Richards, S., J. Eakins, E. Wilson, H. Dibbs. Preparation of xenon-133 radiography sources from spent fuel (*AR*).....Apr. 110
Roarty, J. D., N. Sher, K. Treadwell, J. Zerbe, W. Jacobi. Thermal design criteria for pressurized-water reactors.....Nov. 130
Roberts, H. E. Trends in power generation—lessons for nuclear engineers.....July 76
Rod, Robert L. Recent advances in ultrasonic decontamination (*NE*).....July 104

S

Salasse, Marc. Safety of magnesium canning for CO_2-cooled reactors (*NE*).....Feb. 123
Sanderson, M. J., P. Wright. How General Electric fabricates fuel elements for Dresden Nov. 128
Schafer, A. C., L. Niedrach, B. Dearing. New approach to electrolytic U.....Jan. 64
Schreiber, Raemer E. Los Alamos' Project Rover.....July 70
Schultz, M. A. Reactor control philosophies May 62
Schultz, M. A., R. Murray. Pricing test-1 reactor space (*NE*).....Dec. 76
Schumar, J. F., J. Kittel, R. Noland. Uranium alloys and dispersions.....Aug. 89
Schwendiman, L. C., J. Healy. Nuclear-track technique for low-level Pu in urine (*CS*) June 78
Sery, R. S., R. Fischell, D. Gordon. Radiation effects in magnetic materials.....June 73
Shatzkes, M., M. Chasanov. Attenuation misinterpreted (*LE*).....Oct. 121
Shatzkes, M., M. Chasanov. Attenuation of γ-rays from an infinite plane.....June 63
Sheffield, J. C., F. White. Three-channel alpha-fission counter (*CS*).....Apr. 86
Sher, N. C., K. Treadwell, J. Zerbe, W. Jacobi, J. Roarty. Thermal design criteria for pressurized-water reactors.....Nov. 130
Smith, Forrest L., J. Downs. Organic-glass scintillators (*CS*).....Mar. 94
Smith, Gilbert W., D. Farmelo. Radionuclides arranged by gamma-ray energy..Feb. 80
Spink, D. R., A. McCord. NH_4F—versatile reagent for zirconium fuels (*CS*).....Feb. 94
Spinks, J. W. T., B. Green. A free-moving isodose-tracing machine (*CS*).....Apr. 92
Stanford, Russell E. L. Fast breeders for power (*LE*).....Nov. 210
Starr, Chauncey. The case for enriched uranium.....Aug. 86
Stewart, D. H., Jr., J. Kaufmann. AEC's industrial-heat program.....Feb. 65
St. John, D. S., D. Randall. Xenon spatial oscillations.....Mar. 82
Stonehill, A. A., C. Artandi. Polyvinyl chloride—new high-level dosimeter (*AR*) May 118
Stratton, V. J., H. Bermanis, J. Renaker. Oxide on catcher foils spoils power measurements (*NE*).....Feb. 127
Strella, S., J. Matlack. Nondestructive test for radiation effects (*AR*).....June 103
Sundin, C. W., J. Parnell. A way to stabilize reactor instrument power supplies (*NE*) July 102

T

Tait, G. W. C. Reactor exclusion areas—can they be eliminated?.....Jan. 71
Thie, Joseph A. Boiling-water-reactor instability (*NE*).....Mar. 102
Thie, J. A. Fluid poison control of boiling water reactors.....May 82
Thompson, J. B., K. McCollom, D. deBoisblanc. Sensitive measurement of pulse-amplifier gain (*CS*).....Jan. 74
Thomsen, Flemming, G. Jensen, K. Wilsky, P. Jensen. Slow, simple 99-channel pulse-height analyzer (*IM*).....Oct. 100
Tochilin, E., R. Alves. Neutron spectra from mock-fission sources (*IM*).....Nov. 145
Treadwell, K. M., J. Zerbe, W. Jacobi, J. Roarty, N. Sher. Thermal design criteria for pressurized-water reactors.....Nov. 130
Trice, J. B. Measuring reactor spectra with thresholds and resonances.....July 81
Trice, J. B. Miniature fission chamber (*CS*) July 84

V

van Stekelenburg, L. H. M. New film badge enables cheaper X-ray monitoring (*CS*).June 83

W

Weil, John W. Void-induced power distortion in boiling-water reactors (*NE*)....June 90
Weinberg, Alvin M. Power breeding as a national objective.....Aug. 75
Weir, O. E., A. Krebs, J. Kereiakes, G. Kraft. Beta-excited X-ray sources for scintillation-spectrometry (*CS*).....Jan. 80
Westcott, C. H. Effective cross sections for thermal spectra (*NE*).....Oct. 108
White, F. A., J. Sheffield. Three-channel alpha-fission counter (*CS*).....Apr. 86
Willardson, R. K., J. Moody, G. Kendall. Photovoltaic gamma-ray dosimeter (*IM*) Oct. 101
Wilsky, Kai, P. Jensen, F. Thomsen, G. Jensen. Slow, simple 99-channel pulse-height analyzer (*IM*).....Oct. 100
Wilson, E. J., H. Dibbs, S. Richards, J. Eakins. Preparation of xenon-133 radiography sources from spent fuel (*AR*).....Apr. 110
Wimett, T. F., G. Keepin. Reactor kinetic functions: a new evaluation.....Oct. 86
Wolfe, Bertram. Criteria for test reactors Nov. 135
Wolfe, Bertram. Easy computation of adjoint fluxes (*NE*).....Mar. 121
Wolfe, Bertram. Predicting reactivity at high burnup (*NE*).....Mar. 116
Wolfgang, Richard, C. Mackay. New proportional counters for gases and vapors..Oct. 69
Wright, P. D., M. Sanderson. How General Electric fabricates fuel elements for Dresden Nov. 128

Z

Zerbe, J. E., W. Jacobi, J. Roarty, N. Sher, K. Treadwell. Thermal design criteria for pressurized-water reactors.....Nov. 130

Gas-Cooled Designs . . . *Continued from page 80*

to 1,300° F) helium has been found more attractive.

The ORNL research program will concentrate heavily on fuel irradiation tests and structural materials development. The fuel program, which will be under way by the first of the year, calls for 70 experiments occupying space in four different test reactors; the plans involve static capsules, high-pressure thermal-convection loops and forced-circulation He loops.

Some specific points of interest that came out at the meeting were:

Pressure-vessel thickness limit. Experience at Bradwell has caused the British to be more optimistic about welding thick plate for pressure vessels in the field. They now feel confident they can handle pressure vessel thicknesses up to 5 in. In fact, the greatest difficulties now appear to be those of making thick sections that are free of laminations and shaped accurately enough so that they will align in the field.

Helium consumption. A not unreasonable question, if one is looking forward to a network He-cooled reactor power station, is whether there will be enough helium to go around. On the assumption that a full-scale reactor system could be made tight enough so that it loses only ½ (or 300,000 ft³) of its He charge every year, ORNL estimates that a network of gas reactors capable of supplying 10% of the nation's power would use up He at only 3–4% of the present rate of production. Put in another way, 50 full-scale reactors would after operating 50 years have used up less than 1% of our total He reserves.

UO_2 fission-product retention. Two UO_2 capsules irradiated by ORNL as part of the program mentioned above offer evidence that the UO_2 lattice will retain a much larger volume of fission-product gases than had been previously expected. Experimenters found that only about 1% of the Xe^{133} had escaped from the lattice in the two sets of specimens irradiated to 6,000 Mwd/ton and 10,000 Mwd/ton at a centerline temperature of 1,770° F. At the somewhat higher temperatures in a practical reactor design, ORNL hopes that "properly fabricated" UO_2 will retain 90% of the fission-product gases.

Gas-cooled breeders. Advanced design studies at Oak Ridge have been looking into the capabilities of the gas-cooled concept as a breeder working on the $Th\text{-}U^{233}$ cycle. Calculations for idealized homogeneous graphite and pressure-tube D_2O designs predict breeding ratios slightly greater than 1.0. The net breeding gain, however, looks too small to provide the ten-year fuel-inventory doubling time needed to keep pace with expanding power demands.